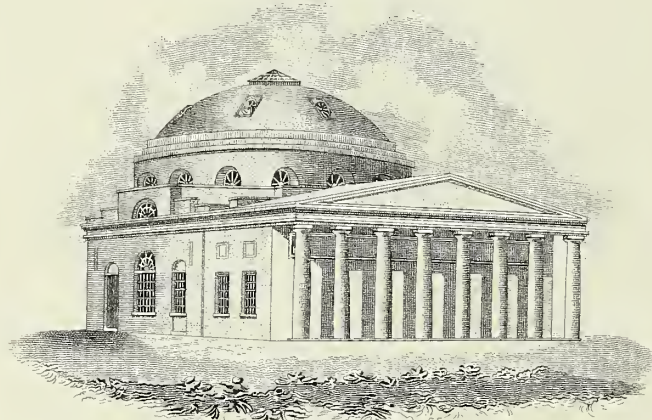


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TRANSURETHRAL ELECTRO-RESECTION OF BLADDER NECK OBSTRUCTION*

HERMAN L. KRETSCHMER, M.D.†
CHICAGO, ILLINOIS

This paper is based upon a review of 282 transurethral resections performed upon a series of 259 patients. During the past eighteen months I have performed only one prostatectomy and this in a patient in whom it was impossible to introduce the resectoscope (because of the enormous size of the prostate), although three different attempts were made to do so. Of the 282 transurethral resections, 23 patients had multiple resections, that is, in about 8 per cent a second resection was necessary. In some of the very large prostates, that is, in cases with very large lateral and middle lobes, the middle lobe and one of the lateral lobes were removed at one sitting and the remaining lobe at a subsequent resection. In some of the early cases not enough tissue was removed and a second resection was necessary.

NUMBER OF RESECTIONS	
Number of resections	282
Number of patients	259
<hr/>	
Multiple resections	23 (8.1%)

AGE INCIDENCE

The youngest patient upon whom a resection was performed was thirty years of age and the oldest was eighty-nine. A review of

*Read before the Annual Meeting of the Michigan State Medical Association, Grand Rapids, Mich., September, 1933.

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the age incidence is given in the following table.

30-40 years	2 cases
40-50 years	7 cases
50-60 years	52 cases
60-70 years	121 cases
70-80 years	64 cases
80-90 years	13 cases

DURATION OF SYMPTOMS

The onset of prostatic obstruction is a very gradual one and the development of symptoms is slow. The course of the disease is progressive. A review of the duration of symptoms in this series showed the following:

1- 5 years	165 cases
5-10 years	61 cases
10-15 years	21 cases
15-20 years	12 cases
Average years	4.22

INFECTION

In a great number of cases there occurs sooner or later some infection of the urinary tract that requires pre-operative treatment. In this series of cases bacteriologic study of the urine showed the following:

B. Coli	69 cases
Staphylococcus Albus	57 cases
Streptococcus Hemolyticus	10 cases
Staphylococcus Hemolyticus	6 cases
B. Coli Hemolyticus	3 cases
B. Proteus	2 cases
Eberthella	1 case

Total number cases infected.... 148

RESIDUAL URINE

When a patient with prostatic obstruction consults the physician, examination shows the presence of residual urine. The amount varies in each case and may change from day to day in the same patient. In the following table are given the number of cases and the amounts of residual urine over 350 c.c. and up to complete retention.

Complete retention	52 cases
500-1000 c.c.	21 cases
250-500 c.c.	33 cases
Total	106 cases

PREPARATION OF PATIENT

It is of prime importance that the infection be controlled or entirely cleared up if possible. The internal administration of urinary antiseptics as well as a large quantity of fluid is part of our routine. Fluids

are administered by mouth, per rectum, and, in rare cases, normal salt solution is given subcutaneously. In the cases of mild infection, massage of the prostate with instillations and irrigations will suffice. In the more severe infections it is necessary to employ an indwelling catheter. Finally, suprapubic cystostomy may be necessary where the indwelling catheter fails to clear up the infection or where its presence produces pain, bleeding, profuse discharge, or reactions in the form of chills and fever. Where complications, such as large stones, are present, it may be necessary to do a suprapubic cystostomy.

The following table gives the method of preparation which was employed in this series:

Indwelling catheter	118 cases
Suprapubic cystostomy	30 cases
Massage and irrigations	32 cases
No preparation	79 cases

ASSOCIATED GENERAL CONDITIONS

It is of great importance in this group of patients that the patient have a comprehensive physical examination and an accurately written history. Many of these patients suffer from organic disease involving other parts of the body, which call for treatment before the resection is undertaken. You are all familiar with the fact that a large number of prostatic patients have some disturbance of the cardio-vascular system. Many of these need pre-operative study and treatment. A certain number have other organic lesions.

Patients with cardiac disease, when first seen, appear to be poor surgical risks but after proper treatment the majority can be safely operated upon. There will always remain a limited number in whom the cardiac function can never be improved sufficiently so that a major surgical procedure is justifiable. But it is especially in the cardiac group of cases that this form of treatment has a wide field of usefulness. Formerly, patients who had had attacks of angina or coronary disease were always looked upon with a great deal of apprehension regarding their ability to withstand a surgical procedure, but today, by means of transurethral resection, their equilibrium remains undisturbed.

The following table shows the incidence of associated organic lesions found in this series.

ASSOCIATED GENERAL PATHOLOGY

Cardio-Vascular System

Myocarditis	119 cases
Coronary disease	18 cases
Angina	9 cases
Hypertension	45 cases
Total	191 cases

Associated General Pathology

Diabetes	12 cases
Lues	6 cases
Cord bladder.....	4 cases
Pulmonary embolism.....	2 cases
Bronchial asthma.....	2 cases
Cerebral thrombosis	2 cases
Carcinoma stomach and liver....	2 cases
Hemiplegia	1 case
Manic depressive psychosis.....	1 case
Paralysis agitans	1 case
Total	33 cases

ASSOCIATED UROLOGICAL PATHOLOGY

As a result of obstruction at the vesical orifice there develops, sooner or later, definite damage to the bladder and upper urinary tract with resulting stasis which predisposes to infection. Hence, a matter of great importance is a complete and careful survey of the entire urinary tract in each case before resection is done. In the following table the incidence of associated findings is given.

ASSOCIATED GENITO-URINARY PATHOLOGY

Diverticula of bladder.....	24 cases
Bladder calculi	14 cases
Carcinoma of bladder.....	11 cases
Prostatic calculi	8 cases
Kidney calculi	6 cases
Ureteral calculi	2 cases
Solitary kidney	2 cases

POSTOPERATIVE COURSE

One of the most encouraging phases of this form of treatment has been the mild postoperative course. As previously mentioned, the stay in the hospital is very short and shock is absent. The general condition of the patient the day after operation stands out in marked contrast to that of the patient who has undergone a surgical prostatectomy. In other words, the patient who has been subjected to a surgical procedure is generally quite ill the day after, whereas the patient who has had a resection is well enough to sit up in bed and often is reading the morning paper when the physician makes his rounds.

POSTOPERATIVE STAY IN HOSPITAL

While it is true that a certain number of patients who have had prostatectomies do not stay in the hospital very long after operation, the average patient, if one takes the cases as they come, spends a long time there. The average stay of prostatectomized patients has been variously estimated to be from three to six weeks.

For purposes of discussion I have divided the cases in this paper into two groups. In Group I are the patients who have been prepared with the indwelling catheter, intermittent catheterization, massage and irrigations. A review of this group shows that the average duration of hospital stay was 8.5 days. Cases with median bars and small middle lobes naturally stay a much shorter time than those with large hypertrophies. The shortest stay in the hospital has been two days.

Group II consists of the patients who have had cystostomies because of complications in the bladder, such as diverticulum, stone, or severe infection, which precluded the preparation of the patient by an indwelling catheter. Also in this group are patients who have had suprapubic cystostomy as a palliative treatment for carcinoma of the prostate. This group comprises 30 resections. The average stay in the hospital was 15.5 days.

ANALYSIS OF POSTOPERATIVE HOSPITALIZATION

Cases prepared by suprapubic cystostomy	15.5 days
Cases prepared by catheter.....	8.5 days
Cases receiving no preparation or only massage	7 days
Average stay (all cases).....	8.6 days
Shortest stay (all cases).....	2 days

POSTOPERATIVE TEMPERATURE

Early in the use of electro-resection it became apparent that fewer patients had temperature reactions, and when postoperative fever occurred it was of much shorter duration than in patients who were surgically treated.

The temperature following this procedure may be due to one of three causes: First, to the instrumentation. It is a well-known fact that, following the passage of sounds, catheters, bougies or cystoscopes, many patients develop a temperature. Second, the temperature may be prostatic in origin. A large number of patients with prostatic obstruction have an associated infection, and

following the resection the fever may be due to a lighting up of a previously present infection in the prostate. The third cause for temperature in a large group is pyelitis or pyelonephritis. The onset of fever with or without a chill, pain and tenderness in the renal area makes the diagnosis easy. In a certain number of cases in which temperature is present, but pain and tenderness are absent, it is possible that the patient may have a mild pyelitis, severe enough to produce temperature reactions and yet not produce enough pain to call attention to the possible renal origin of the pain. From an academic standpoint this question could be determined by ureteral catheterization, but it is my opinion that it is not of sufficient importance to justify ureteral catheterization.

An analysis of the temperature reactions is given in the following table.

POSTOPERATIVE TEMPERATURE

Having no temperature.....	17 resections
Having had temperature.....	265 resections
Average duration of temperature	2.4 days
Temperature for 1-2 days only....	168 resections

TEMPERATURE RANGE

99°-100°.....	75 resections
100°-101°.....	88 resections
101°-102°.....	51 resections
102°-103°.....	24 resections
103°-104°.....	26 resections
104°-105°.....	1 resection

Temperature	265 resections
No temperature	17 resections
	282 resections

HEMORRHAGE

A certain amount of blood persists in the urine for a few days following the resection, the amount depending in part upon the care and attention given the control of bleeding at the time of operation. I try to have the patients go back to the room free or relatively free from bleeding. In some of the smaller prostates many patients go back perfectly dry, and in others the urine is clear the next day. In the average case, however, the urine is blood-tinged for two or three days. A small amount of bleeding may persist, in an occasional case, for a week; that is, after the patient has left the hospital a few specks of blood may be found in the voided urine.

Secondary bleeding occurs in a small number of patients, beginning generally on the tenth or twelfth day. Similar to what oc-

curs after surgical procedures in any other part of the body, secondary bleeding is nearly always due to infection. This is not surprising if we bear in mind that many of these patients had infections before resection.

The incidence of secondary hemorrhage in this series occurred in six cases.

The management of secondary hemorrhage has been along the following lines: In a good many cases the bladder fills with blood clots and these we evacuate with a Bigelow evacuating canula and pump, followed by irrigations of the bladder with a mild potassium permanganate solution. This simple procedure serves to control the hemorrhage in most cases of secondary bleeding. In some cases it was necessary to go back and control the bleeding with the resectoscope. As a rule, after the resectoscope has been introduced the bleeding point can be seen and the fulguration current applied directly to it. In some instances, instead of fulgurating the bleeding point, I have excised the bleeding area so as to have a fresh, clean, non-infected area for wound healing.

EPIDIDYMITIS

In the early part of the series no attempt was made to prevent epididymitis for the specific purpose of determining whether or not epididymitis occurred more frequently following resection than after suprapubic prostatectomy. A review of the first 110 cases showed that we had an incidence of 15 cases of epididymitis. Since that time we have made it a routine to obtain the patient's permission for vasectomy in all cases except in relatively young men. Since the establishment of routine vasectomies we have had no further complications of this type. It is a simple procedure to remove about an inch of the vas deferens, and this, I believe, more completely prevents epididymitis than does the subcutaneous ligation.

GENERAL COMPLICATIONS

I have been greatly impressed by the absence of general complications following the use of the resectoscope. A review of this series of resections shows the following postoperative complications.

Singultus	6 cases
Broncho-pneumonia	2 cases
Psychosis	2 cases
Pulmonary embolism.....	1 case
Cerebral thrombosis.....	1 case
Parotitis	1 case

PERSISTENCE OF SYMPTOMS FOLLOWING
RESECTION

Because of the relatively short stay in the hospital and because the patient is up and about, there are certain symptoms that are more frequently emphasized on the part of the patient than there are when the patient has had a suprapubic prostatectomy followed by a long stay in the hospital. Under the latter circumstances, when the patient's fistula heals he leaves the hospital; wound repair of the prostatic bed has generally been complete and the symptoms are mild. Following transurethral resection the wound is not healed at the end of a week when the patient leaves the hospital, and, naturally, certain annoying symptoms are present. Chief among these are frequency of urination, pain and burning on urination. It is extremely gratifying, however, to see how rapidly these symptoms disappear. As a rule, they persist for a week or ten days after the patient leaves the hospital, and are readily controlled by means of alkalies and sitz-baths.

RESIDUAL URINE

In some cases a certain amount of residual urine is present after the patient leaves the hospital, but in my experience this clears up rapidly, hence it cannot be considered a disturbing element. I would like to mention

one particularly striking case, a patient eighty-eight years of age, who had a residual of 2,000 c.c. before resection. When he left the hospital he had six ounces of residual, and with catheterization and irrigation this was reduced to one ounce. In several cases it was necessary to do a second resection to relieve the residual completely.

INCONTINENCE

In a few instances the difficulty in controlling the urine was such that the patients were obliged to wear a cloth after leaving the hospital, but under treatment this condition rapidly cleared up. In one case of carcinoma of the prostate the incontinence was disturbing for a long time, probably because the carcinoma was extensive and had infiltrated the sphincter so that it was injured during the resection; and in one case of benign hypertrophy the patient wears a glove at night, although on many mornings his glove is dry.

In this series of 282 resections there were eleven deaths, a mortality of 3.9 per cent.

Transurethral resection for the treatment of bladder neck obstruction, either benign or malignant, is a distinct advancement in treatment. It makes treatment possible in a group that heretofore were denied major surgery. A short period of hospitalization is an added advantage to many people, particularly at the present time.

NASAL INFECTION IN CATARACT

J. G. HUIZINGA, M.D.†

HOLLAND, MICHIGAN

In a recent fairly complete résumé of the literature on the "Pathogenesis of Senile Cataract" Kirby fails to mention the influence of infections. These are so rarely referred to and their modus operandi so meagerly or imperfectly described in the literature that it seemed pertinent to bring this subject to your attention for discussion, especially in its relation to that type known as simple senile cataract. Senility will be only briefly considered, not as an adequate cause, but as a predisposing factor. What is senility? In man at least, death from uncomplicated senility is doubtful and yet senility may be the dominant factor which determines the inevitableness of death. Senility may be defined as such a gradual and continuous decrease of the vital proc-

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esses of metabolism within the individual cell without other pathology that, sooner or later, life can no longer be maintained. There is a universal law of antagonisms. The antagonism of life is death, and pathological processes are antagonistic to physiological. In senility the normal physiological

processes will in time become so weakened as to fall easy victims to the pathological. Thus senility is the predisposing factor that makes it more possible for pathological conditions to interfere with or to destroy the normal vital metabolic processes of the individual cell, even though these pathological processes might by themselves and alone, under ordinary conditions of health, be of minor importance or of no significance. But given a condition of lowered cell resistance due to senility, these pathological conditions become a menace and an etiological factor of great importance.

It is high time that the factor of senility in cataract be thus frankly stated, because there is at the present time a tendency on the part of a great many to think and speak of cataract as a result of senility and then fail to investigate further. Senility, therefore, must be recognized as a predisposing factor, but no more. The question still remains, what is the active or final determining cause in the etiology of this condition? Simple senile cataract, therefore, is by no means as simple as its name would indicate. There is no simplicity about it. Instead of dismissing it with a wave of the hand, it should urge us on to more intensive investigation. The problem is so extremely complicated and the processes by which lens opacities are formed are so insidious and so involved and so numerous that we have been able to recognize only a few up to the present time.

This leads us to the consideration of what I should like to call the neuro-angietic factor as a possible contributing cause for that condition, which, in addition to senility, may at least be one of the final and determining ones to bring about the complex condition known as simple senile cataract. Whether the theory advanced has any value or not must be determined by further investigation and observation by you and others who are experts in this field.

Those of us who have been fortunate enough to have seen one or more of that rather rare type of cataract which, in all essential respects so far as onset, progress, and appearance are concerned, is similar to the simple senile type but occurring at an earlier age, between thirty and fifty years, have had considerable difficulty in accounting for them. They usually occur in one eye only, with no evidence of diabetes or any other known causative factor.

In the few cases that I have seen there has always been found an infection of the sinuses involving the ethmoid regions primarily, and sometimes the antrum by extension, and frequently unilateral on the side of the cataract. If this sinus condition was bilateral, it was always worse on the side of the cataract. We believe this relationship is more than incidental, and that it also applies to a certain per cent of our regular simple senile cataract cases. There is no extension of the ethmoid infection *per se* into the orbit. It is extremely doubtful if there are any biophysical or biochemical changes in the general blood stream due to this infection. How, then, shall we account for this relationship and on what theory shall we base our explanation? An attempt will be made to answer this question by a study of the influences of both increased and decreased stimulation of certain branches of the trigeminal nerve. Stimulation of the trigeminal produces increased intra-ocular pressure. Duke-Elder explains this as follows: "While possessing no specific vasodilator nerves the trigeminal shares the function common to all sensory nerves of producing vaso-dilation by antidromic activity. * * * It should be noted," he says, "that the nerves appear to act secondarily by interfering with metabolism of the tissue cells in such a way that substances of the nature of histamine are formed which are actually responsible for the capillary dilation. * * * This dilation seems to involve the entire uveal tract, causing an increase of intra-ocular pressure and an increase of capillary permeability." If the fifth nerve is cut, degenerative changes take place in the eye. If the normal action of the fifth nerve is disturbed there will be a disturbance of the trophic impulses, producing faulty nutritive effects in the tissue cells supplied by it.

A neuritis of sensory nerves is often accompanied by a herpes due to faulty metabolism in the vicinity of the nerve terminals. Simple senile cataract is often accompanied by degenerative areas of the retina and choroid and by pathology in the retinal vessels. Sclerosis of the retinal vessels is common even when that condition cannot be demonstrated elsewhere in the body and is indicative of a changed metabolism locally. Sclerosis of the lens is an incipient stage of cataract. The fifth nerve is more often the seat of neuritis than any other nerve. The functional integrity of its terminal branches

is essential for normal metabolism, the control of capillary permeability and the proper control of the whole of the bio-physico-chemical activity of the tissues supplied by them. Every ophthalmologist frequently comes across a case of refraction in which it seems impossible to give glasses that are satisfactory and comfortable to the patient. However careful and complete his examination may have been and however often his tests have been confirmed, it seems impossible to obtain satisfactory results with any glass that may have been prescribed. Too often both patient and physician get disgusted each with the other. Now if the physician will examine the ethmoid region of his patient, he will probably find some pathology that may appear quite unimportant on superficial inspection, but which if properly treated will frequently give him the happiest results. This condition has been observed so often that it has become a routine habit with us to examine practically every nose at the time the refraction is made in order to avoid unpleasantness or trouble afterwards. If there is a suspicion that any ethmoid pathology should be a factor in the headache and asthenopia, refraction is deferred until the nasal conditions are under control. After such attention to the nose, we have been able, occasionally, to let the patient go without glasses even when he seemed to have required them before. Every ophthalmologist frequently sees a congested and inflamed conjunctiva without any appreciable pus formation or other evidences of infection that stubbornly resists the ordinary treatment. In almost every such case there will be found some pathology in the ethmoid region of the nose, which, if corrected, will be followed by an immediate improvement of the eye condition. These are cases illustrative of the true antidromic action of the trigeminal nerve.

This antidromic action of the fifth nerve works both ways. Not only can nasal irritations cause asthenopia, irritations, congestions and degenerative processes of the eye, but corneal ulcerations and other congestions may produce edematous congestions of the nasal mucosa accompanied at times by violent sneezing, especially when the eye is opened and exposed to light. There appeared in the abstract division of the *Archives of Ophthalmology* for July, the following, which confirms to some extent the

contention of neuritis of a branch of the fifth nerve being the cause of ocular pathology:

NEURITIS OF THE NASAL NERVE. Francois, Arch. d'opht. (Nov., 1931).

After first describing a personal observation, the author reviews the anatomy of the ophthalmic branch of the fifth nerve, going into considerable detail in regard to the nasociliary branch. He also described the composition and distribution of Meckel's ganglion. The symptoms of neuritis of the nasal nerve are oculonasal in character. 1. There is usually a lesion of the anterior pole of the eye (corneal ulcer with or without hypopyon, iritis, mild cyclitis, mild conjunctivitis, a disturbance of the corneal epithelium discoverable only with the slit-lamp). 2. Very violent attacks of neuralgic pain occur paroxysmally, out of proportion to the ocular condition. These attacks of pain are accompanied by enormous hydrorrhea. 3. There is marked congestion of the nasal mucosa of the lower turbinate, which is also extremely sensitive to touch. 4. Often there are skin changes, dry herpetiform vesicles or crusts. 5. The pain is promptly relieved by the application of cocaine and epinephrine or butyn and epinephrine to the mucous membrane of the anterior superior part of the nasal fossa, and is unaffected by the instillation of cocaine into the conjunctival sac. 6. Rapid and lasting cure, which rebelled to all the ordinary ocular therapeutic measures, follows this application. The etiology has been ascribed to nasal spurs in two cases by d'Arganaraz and Espildera, an acute infectious process by Charlin in two cases and to a mild rhinitis with a deviated septum in the author's case. The onset of this neuritis, according to Charlin, may be due to strangulation of the nerve at its entrance into the nasal cavity by swelling and congestion of the mucous membrane of the nose. The rapid relief obtained by the treatment, used with success in his case, leads the author to support this hypothesis. According to Magitot, "stimulation or section of the fifth nerve modifies the chemical composition of the aqueous humor." He intimated that the endothelial cells which preside over the dialization can be injured and their function interfered with by a disturbance of sensory innervation.

Magitot and Billiard have demonstrated that in glaucoma there is a local intra-ocular high blood pressure in spite of the fact that this hypertension may not be demonstrable anywhere else in the body. Magitot suggests that his local hypertension with its subsequent sclerosis may be due to "a derangement of the vasomotor mechanism controlling the ocular circulatory bed." What Magitot-Bailliar and Duke Elder have found to be true with regard to intra-ocular pathologies in glaucoma due to local circulatory disturbances resulting from abnormal nerve control is equally applicable to cataract and perhaps other conditions. Gifford and Lebebsohn call attention to the "extreme slowness of lens metabolism." Ethmoid and most other infections of the nose are notoriously chronic in their nature. The excessive nerve impulses, due to these infections and inflammations, transmitted over a long period of time to the cerebrum relayed back to the eye would seem to meet the requirements necessary to alter seriously the lens metabolism. On the other hand, the suppression or partial suppression of nerve impulses due to degenerated or partly atrophied nerve fibers resulting from these infections, would likewise have a slow and long continued effect in the decreased ocular enervation, which also must ultimately seriously influence lens metabolism.

In an article of Gifford on the "Etiology of Acute Iritis," due to focal infections, he reviews the litera-

ture and finds the percentage of cases so reported to be as follows:

Per cent	Author	Year Reported
4	Gilbert	1929
4	Balson	1925
2	Irons and Brown.....	1923
8	Newton	1926 (uveitis)
6.8	Gifford	1930

Nearly all of these infections were in areas controlled by the fifth nerve.

In a review of the more recent literature on inflammation of the iris, ciliary body and other parts of the interior of the eye one cannot fail to notice an increasing tendency of the writers to ascribe as etiological factors various local infections of the head. If these infections can set up pathological processes in other parts of the eye, why cannot they produce such alteration of the aqueous humor as to bring about a cataract? It is extremely doubtful if all cases can be explained on the theory of complex chemical substances, such as enzymes and possibly other products of germ infection, circulating in the blood. It is still more doubtful if there is any actual infection of the eye tissues by the germ itself in that type of cases. The iritis and cyclitis in most of these cases is so similar to a neuritis of the ciliary nerves that it raises the question whether we are dealing with a true iritis or cyclitis or with a neuritis which causes the iris to swell and actually become inflamed secondarily. If that be the case then the iritis and cyclitis are symptoms of an active neuritis and in the treatment of that neuritis, attention must be paid to the cause of it. This will frequently be found in an infection somewhere within the field of distribution of the fifth nerve.

Parenthetically it may be well to call attention to the work of *Lavagna*, who for years has been doing research work on the infectious origin of cataract, and recently gave some results of his investigations. He believes in an infectious origin of cataract. He states that, "*The increase of lipoids observed in the tissues of a cataract is, in his opinion, a defense reaction of the organism against a chronic infection, for similar reactions are observed in septic gangrenes caused by certain anaërobic bacteria. Cataract is transmissible to the guinea-pig by intra-ocular inoculations of an emulsion of cataract tissue. An emulsion of human cataract introduced subcutaneously, or even by mouth, causes cataract to develop in animals in 60 per cent of the trials, which*

proves that there is a special virus manifesting a veritable troism for the lens. A bacteriologic examination of smears of the tissue of fifty cataracts showed bacteria in only 20 per cent of the cases; but the cultivation of this tissue in anaërobic mediums gave positive results in 90 per cent. The microorganism most commonly encountered is a facultative anaërobic diplococcus, which grows readily in deep implantations in gelose. Its morphology may vary; one finds two strains, one form being streptococcic and twice as abundant as the other, which is bacillary. The inoculation of these cultures into animals causes cataract *eighty times out of a hundred* when it is applied to the eyeball or to the conjunctiva. In experiments made with other bacteria, the only ones that produced somewhat similar lesions were certain diplostreptococci isolated from rheumatic lesions, a strain of hemolytic streptococcus obtained from the Institute Pasteur, and a strain of *Clostridium welchii*. Lavagna prepared an immunizing serum from cultures made with various strains derived from human cataracts and killed by means of heat. If an injection of this vaccine is applied to the animal a month before the virulent culture is injected, cataract does not develop. If the vaccine is applied less than one month before the inoculation, it protects in only half the cases. Lesions are produced in the other half, but they remain translucent and never invade the whole lens. Attempts to treat cataract in man by means of this vaccine gave encouraging results. The functional disorders are attenuated, and the opacity of the crystalline lens remains in the primary stage."

Mr. A. F. MacCallan at the ninety-seventh meeting of the British Medical Association spoke as follows: "In the majority of cataract cases I have examined or treated in the last few years there has been definite focus of sepsis, more often situated in the mouth than elsewhere. I believe that the most important cause of cataract formation is the presence of long continued local sepsis, generally dental. Therefore it is of the greatest importance to recognize in our patients as early as possible the slightest opacity in the peripheral cortex of the lens, to deduce from it the probable presence of a septic focus, to localize the focus, and to put the patient in the way of getting the focus eliminated. If this was generally carried out

very few cataracts would be available for operation in another ten or twenty years. However, as long as the ordinary well-to-do person insists on retaining septic teeth in his head, dentists will be found to patch them up and crown them, and we operating ophthalmic surgeons will still have a future before us."

From what has been said it is evident that lesions of the eye are frequently caused by irritations of some branch of the fifth nerve; that the nature of this irritation is frequently a more or less chronic infection which in all probability produces a neuritis of a low grade that in time will cause sufficient changes in the nerve itself to seriously interfere with its proper functions of regulating cell metabolism and vasomotor control of the circulation, especially of the uveal tract. In addition to this there is the possible influence of the antidromic action of sensory nerves, which is known to be a factor, at least in other pathological conditions of the eye. This interference with proper cell metabolism, the formation of histamine-like chemical products and the consequent capillary dilation with increased capillary permeability is at least one potential cause for the condition known as simple senile cataract. Having found a physiological basis for our theory we have tried to confirm it by clinical observation.

SUMMARY

Simple senility alone is not an adequate cause for cataract. Evidence from research by others has been submitted that local capillary permeability can be altered

both by an abnormal decrease and an abnormal increase of fifth nerve stimulus; that the chemical, physico-chemical, and probably the bio-chemical properties of the aqueous can be changed by the same means; that changes in the tension of the eye can be thus produced and that sclerosis of the blood vessels, especially of the capillaries and endothelium, can result from such disturbed innervation. Attention has been called to the fact that local infections and inflammations of regions within the distribution of the trigeminal can and does produce such an abnormal increased nerve stimulus as is capable of bringing about altered metabolic conditions with their subsequent pathologies in the eye. Attention has also been directed to the fact that the fifth nerve is extremely subject to inflammations the result of local infective processes; that repeated or long continued inflammatory conditions of this nerve will ultimately bring about such changes in its structure and function as to seriously interfere with normal cell metabolism in the eye and particularly in the region of the ciliary body.

CONCLUSION

If to the factors presented we add the factor of decreased cellular resistance due to senility we believe we have presented an adequate etiology for the production of so-called Simple Senile Cataract as a result of both an abnormally increased as well as of an abnormally decreased innervation of the fifth nerve. The normal cell metabolism of the crystalline lens is so delicately balanced as to be easily disturbed and destroyed by the conditions mentioned.

REPORT OF FOUR FOREIGN BODY CASES WITH ENDOSCOPIC REMOVAL*

WALTER K. SLACK, A.B., M.D.†

SAGINAW, MICHIGAN

During the past three and a half years, I have encountered several interesting cases of foreign bodies in the bronchi which I am now reporting. The mere fact that a foreign body was aspirated, the bronchoscope passed, and the foreign body removed, does not in itself justify this paper, as endoscopic removal of bronchial foreign bodies has become nowadays so common that it is nothing unusual. But in each of these cases which I am now reporting, there is an interesting fact and a lesson to be learned by which to profit.

Case 1.—B. W., white female child, aged eight, was first seen August 5, 1930, at midnight. The history was that while she was playing that afternoon she had swallowed a ball bearing. The child immediately became cyanotic and dyspneic. The patient had paroxysms of coughing. The family doctor was called, who stood the child upon her head, but the child became very blue. He had taken x-ray which showed the foreign body at the bifurcation of the trachea.

On examination, I found a fairly well nourished child not acutely ill. An "audible slap," "palpatory thud" and an "asthmatoïd wheeze" were present. Breath sounds were diminished on both sides. Coarse râles were heard on both sides.

The child was immediately taken to the operating room where, under general anesthesia, an 8.5 mm. Haslinger bronchoscope was passed. The foreign body, a ball bearing, was localized just within the left main bronchus. Attempts to grasp it were unsuccessful and seemed to wedge it further in. After several unsuccessful attempts, the tube was withdrawn. The following day at noon the child was again taken to the operating room. X-rays of the chest that morning showed the ball bearing to be still located in the left main bronchus. Under general anesthesia, assisted by Dr. F. J. Cady, I again passed the bronchoscope. Different forceps having meanwhile been obtained, the foreign body was several times grasped but was pulled off by the vocal cords. Finally, the foreign body was safely withdrawn. The patient left the table in good condition and had an uneventful recovery. The diameter of the ball bearing was 9.5 mm.

Comment.—A ball bearing in the bronchus is certainly an unusual foreign body. The average diameter of the glottis in children is from 8 to 10 mm. according to Brunnings.¹ The difficulty in extraction made the aspiration of a foreign body of that size amazing. This case is therefore presented to show how large a foreign body may pass through a glottis of a given diameter.

Case 2.—G. D., white female child, aged sixteen months, was first seen August 27, 1931. The patient became sick eight days before admission to the hospital. While eating peanuts, she choked and began to cough. She became very dyspneic, which condition continued all day but she felt better the following day. That night she became worse and several physicians were called who diagnosed her condition as bronchitis. Since then, she had been treated for bronchitis but had become progressively worse.

Examination showed a well nourished young female child, sitting up and quite dyspneic and cyanotic. Nose and throat were negative. Direct laryngoscopy showed the larynx covered with a gray membrane; there was no visible obstruction. Examination of the thorax showed bilateral equal limited excursions and labored respiration with retraction of the intercostal spaces. Fremitus was decreased. The lungs were hyperresonant on percussion. Râles throughout the both sides of the chest with faint breath sounds. An "asthmatic wheeze" was heard over both sides.

The patient was taken to the x-ray department where a roentgenogram was taken. The following report was given by Dr. W. K. Anderson:

"Film studies of the chest in the inspiratory and expiratory phases—the films show both lung fields equally distended with air. There is no inequality in the illumination in either lung field. There is evidence of considerable hylus thickening. Indication would be in favor of a foreign body obstructing the trachea, acting as a ball valve, allowing inspiration and largely preventing expiration. The foreign body is not radiopaque, no shadow of it is cast."

The diagnosis of tracheal obstruction was self-evident so the patient was sent to the operating room for bronchoscopic examination. Under no anesthesia a 7 mm. Haslinger bronchoscope was passed with no difficulty. The trachea was greatly inflamed and covered with a gray membrane. A foreign body was located at the bifurcation of the trachea, occluding both bronchi. Around the edges of the foreign body gushed thick mucus. The foreign body was grasped with a forceps and removed. Respiration immediately improved. The patient left the table in good condition. The convalescence was uneventful and the child made a rapid recovery. The foreign body was found to be half of a large peanut.

Comment.—This is a typical case of an aspirated foreign body. The irritating substances in the peanut set up a very virulent bronchitis—termed arachidic bronchitis by Jackson. Being of vegetable matter, it swelled rapidly and nearly occluded the

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trachea. It is a marvel to me that the child recovered at all.

Case 3.—W. S., male white infant, sixteen months old, was first seen May 29, 1933. Three weeks previous the patient choked while eating peanuts. He became cyanotic and dyspneic. He was taken at once to the family doctor, who prescribed medicine. For the past three weeks the patient had had paroxysms of coughing, a rattle in his throat on breathing and coughed up considerable mucoid material. During the past two days he had become much worse.

Physical examination showed a definite wheeze heard over the whole chest, trachea, and at the open mouth. There was diminished expansion of both lungs and the breath sounds were absent in both bases.

The x-ray report given by Dr. W. K. Anderson was as follows:

"Film studies of the chest show the presence of a very extensive emphysema on the right side. Considerable infiltration around the left hilus and ascending bronchus. The cardiac shadow is moderately displaced to the left. The appearance would indicate the presence of a non-opaque foreign body in the right bronchus obstructing the exit of air."

The patient was taken to the operating room and anesthetized very lightly with chloroform. A 6½ mm. Haslinger bronchoscope was passed with no difficulty. In the right main bronchus, at the level where the superior lobe bronchus branches off was seen half of a peanut. When this was grasped with forceps, a piece snapped off. As the patient was rapidly coming out from the anesthetic, the forceps were removed. While the tube was being removed, the patient coughed a small piece of peanut through the tube. After more anesthesia had been given, the tube was again passed and the foreign body located. Before forceps could be passed down the tube, the patient coughed the rest of the peanut out through the tube. The mucous membrane of the right bronchus was but very slightly swollen and a little redder than usual. The patient made an uneventful recovery.

Comment.—The first interesting thing in this case is the fact that a sixteen months old child was fed peanuts. Again, that with a definite history of foreign body aspiration with a very noticeable wheeze, medicinal treatment should have been persisted in as long as it was. The same is true in the previous case. According to Jackson,² the younger the child, the greater the severity of the symptoms, but this case certainly was an exception. Except for the wheeze and an increased expectoration, the child appeared normal. For the past week he had acted normally. Another interesting thing is that there were no sequelæ. The child surely must have been born under a lucky star.

Case 4.—W. B., male white child, one and one-half years old. Seen May 23, 1932. The history was as follows: In the afternoon the child swallowed a peanut and began coughing severely. He was taken at once to a physician, who immediately referred him to my office. The father came in holding the child, who was coughing very hard and was very cyanotic. He stated that on the trip to

Saginaw the child became very blue and could not breathe at times. By pounding the child on the back he revived him.

Examination of the lad showed a very cyanotic and dyspneic child. The breathing was labored and the interspaces markedly retracted. Breath sounds over the entire chest were very faint. Thinking that perhaps the foreign body might be localized in the larynx, I performed a direct laryngoscopy at once but nothing was seen. The child however began to breathe easier so he was sent to the hospital for x-ray and further examination.

While the father was getting into his car, the child coughed up a half of a jumbo peanut. The breathing was much improved, in fact seemed normal, but the father was advised to continue to the hospital for an x-ray of the chest. The child entered the hospital coughing excessively and raising thick mucoid material. An x-ray of the chest was taken and the report by Dr. W. K. Anderson was as follows:

Film studies of the chest in a search for a non-opaque foreign body. One film was taken in the phase of expiration and one in the phase of inspiration. Diaphragmatic level on the right, in inspiration is at the level of the ninth rib. In expiration it is at the level of the eighth rib, indicating free exchange of air. Diaphragmatic level on the left side is at the level of the tenth rib, both in inspiration and expiration. The exchange of air is therefore nil or extremely limited. Appearance would indicate an obstruction of the left bronchus.

Physical examination of the chest: Percussion apparently normal. Breath sounds loud, with coarse moist râles over both lung fields. Air is entering both lungs.

The patient was taken to the operating room and under general anesthesia an 8 mm. Haslinger bronchoscope was passed. Occluding the left main bronchus, and in it, was seen the foreign body. This was grasped with forceps and removed. It was one-half a jumbo peanut. The patient had an uneventful recovery.

Comment.—This case is interesting and very instructive in that there was a definite history of aspiration of a foreign body with the classical symptoms following. A foreign body was coughed out and had not a roentgenogram been taken, the child would have returned home, some distance from Saginaw, with a foreign body in its bronchus. I believe that every patient who has aspirated a foreign body and then coughs it out should be rayed anyway. It is easy to make a mistake here. I nearly did, as the physical signs in going over the chest did not, at least to me, signify a foreign body. Had it not been for the roentgenogram, I should have missed it. This case also shows that in foreign body work the roentgenologist and the endoscopist must work together. Also it is necessary that the roentgenologist be familiar with the Manges technic for visualization of non-opaque foreign bodies in the chest.

SUMMARY

The cases are being reported here because

I believe they are instructive. The first is interesting from the point of view of how an object of such a size could be aspirated, and presented a definite problem as to its removal. Two of the peanut cases show a great diversity of symptoms. The first showed a very severe reaction with the child practically moribund. The second showed very little reaction, which is very uncommon. Both infants were the same age. Undoubtedly the second child would have de-

veloped a lung abscess in time. The last case reported shows the necessity of close coöperation between the endoscopist and the roentgenologist, and that in every suspected foreign body case the patient must be rayed regardless of whether the object was or was not coughed out.

REFERENCES

1. Brunnings: *Bronchoscopy* (translated by Howarth). Wm. Wood & Co., page 137.
2. Jackson, C.: *Bronchoscopy and Esophagoscopy*. Second Edition, Saunders, page 181.

A DISCUSSION OF GALL-BLADDER DISEASE, AND ITS MANAGEMENT*

HENRY J. VANDEN BERG, M.D., F.A.C.S.

GRAND RAPIDS, MICHIGAN

In a discussion of gall-bladder disease I know of nothing especially new to present to you, but the subject is nevertheless always an interesting one, full of life and action, largely because of the various points of view that naturally come up in the diagnosis and management of the disease; first of all, possible disagreements between the internist and surgeon, then between the internist and internist, and the surgeon and surgeon. The gall bladder is of such great clinical significance because it is so often affected by disease. There is probably no greater trouble-maker than it in the abdomen. When gall-bladder disease comes to our minds, we naturally think of an infection of the gall bladder, and with this gall stones is almost synonymous. In fact, the usual sequence is infection and then gall stones. It may be said that the tendency to the formation of calculi is the most characteristic feature of the disease of the biliary system. It is well known that there are numerous ways by which infections can reach the gall bladder, as through the portal circulation descending with the bile; by the blood stream; by the way of the lymphatics from the liver, pancreas or duodenum; and by direct invasion from the neighboring organs due to inflammatory lesions such as, for example, a duodenal ulcer. Possibly also, but much more unlikely, infection may ascend from the duodenum along the common duct. The most frequent offending organisms are the streptococcus and the colon bacillus.

Another factor in the causation of gall stones in particular is an increase in the cholesterol content of the blood. Not infrequently pure cholesterin stones are removed from patients with all the characteristic symptoms of cholecystic disease in which no gross or microscopic evidence of disease is demonstrable. The disturbance of cholesterin metabolism, the exact nature of which is not completely understood, may express itself in deposits of cholesterol in the sub-epithelial cells of the mucosa of the gall bladder, presenting the picture that is known generally as the "strawberry" gall bladder. In this condition, as in the case of the pure cholesterin stone, no other gross or microscopic evidence of disease need be present.

I can never get away from the belief that the real reason for the chronicity of infection of the gall bladder is because of the mechanical conditions that are present to interfere with its drainage. It is after all an appendage of the common duct, as is the vermiform appendix of the cecum. It is also a blind pouch, and it drains through a small orifice against gravity. As soon as inflammation takes place the narrow orifice of the cystic duct is narrowed still more because of the swelling of its walls. Moreover, an inflamed gall bladder secretes mucus, and the presence of mucus must tend to block the outflow of bile. The complete chain of events that takes place in the formation of gall stones is probably not understood fully even today. However, it does not require much imagination to realize that the nucleus for gall stone formation is almost sure to follow the precipitation and agglutination

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of the solid contents of the bile plus epithelial debris that is sure to accompany inflammation under conditions of altered drainage in a drainage system with natural hazards from the very beginning. The gall stones once formed, we have what probably is in the majority of instances *the first complication of gall-bladder disease*. Once formed, gall stones are responsible in a large measure for keeping the fires going. If good drainage of an infected gall bladder could be re-established before gall stones developed, the infection would in most instances probably subside completely or nearly so, as is the case when a gall bladder is operated by cholecystostomy with removal of stones and good drainage given it. Gall stones in themselves add to the hindrance of drainage; they traumatize the walls; they are responsible for the characteristic agonizing attacks of pain. The infection in the gall bladder itself may be anything from a mild infection to an empyema, necrosis and gangrene, and perforation, and while these infections may have serious possibilities, they are principally of local significance, and are after all only a small part of the danger. The real significance lies then in the fact that once infected, and especially if gall stones are formed, the gall bladder tends to remain so, and it then behaves as a constant focus from which infections spread by direct extension to important parenchymatous organs—in other words, to vital tissue such as the liver, there causing changes variable in degree, from a mild hepatitis, a mild cholangitis, to marked inflammatory changes affecting all the structures and producing even a biliary cirrhosis. Naturally the presence of stones in the common duct, these having their origin in the gall bladder in practically every instance, adds to the seriousness of the consequences, the details of which I cannot discuss here. At any rate the damage may progress to a point where the function is so disturbed, or the reserve so used up, that there is not sufficient liver parenchyma left to carry on the work of this important organ. This applies equally to the pancreas, where chronic pancreatitis is not an uncommon affection. The infection may be more acute, even up to the point of hemorrhagic pancreatitis, which is, as you know, probably the worst catastrophe in the abdomen that can befall any one. This is not all. Other important vital tissues may be, and do become involved in the swath of its

course, notably the heart and kidneys. I realize that I am presenting a word picture of the pathological condition at its worst, and I do this deliberately in order to bring to the attention of the clinician a better realization of the entire disease picture that may obtain in any given case, and that actually is encountered by the surgeon not infrequently. Unless a physician has this conception of the disease he is too liable to treat it too kindly. Gall-bladder disease is one which is chronic in its course, and acute exacerbations tend to subside. The physician has considerable assurance, therefore, that a given attack will subside again, and it naturally becomes an easy matter for him to procrastinate. The patient has learned from experience that attacks do subside, and he is therefore also in a mood to procrastinate. Consequently it becomes an easy matter for the physician to give a hypodermic injection for the pains, and for the patient to accept the treatment without question. The tendency to do something, but to get nowhere, applies as well to the entire regimen of medical management such as diet, frequent meals, magnesium sulphate, bile salts and anti-spasmodics, and the various medicines for flatulent dyspepsia.

A point of great significance is this—symptoms of patients with gall-bladder disease may be no worse than they have been for many years in the past, the agonizing attacks of gall stone colic may be infrequent. A patient, of course, is not supposed to know that in the meantime the pathology may be progressing, and while a physician cannot be sure that it is, he should know that there is a good chance that it is doing that very thing. If, therefore, a patient who has a frank gall-bladder disease, one that makes enough trouble to prompt him to seek relief, is not afforded that relief by the ordinary medical management, he should then be advised with intelligence, understanding and fairness. A patient should be informed that in his case the treatment is one that requires surgery, and if this fact is presented to him in a fair way he is in most instances very glad to accept the advice. At any rate the internist should *let-go* of such patients.

There seems to be a wave of conservatism in the management of gall-bladder disease, brought about, I believe, by the voluminous literature that has been produced during the past few years on the function of the gall bladder. So much emphasis has been

given it that the belief has become pretty general that the gall bladder is an organ of importance far beyond its actual value. Fortunately one does not need to allow himself to lose his sense of values because of a prolific literature, any more than he needs to believe that a criminal is, after all, a good citizen who should be protected.

I know of practicing physicians of long experience who have had an enviable following who have never advised the removal of a gall bladder. One or two of these have gained some reputation, such as it is, for their skillful management of this disease without the knife. Such a practitioner compares very well with the shyster lawyer who has gained a reputation for protecting the criminal.

I do not wish to discuss the diagnosis of gall-bladder disease in detail, but I can say from the outset that in many instances one runs into difficulties. In the first place it is extremely perplexing to know in many cases whether one is dealing with disease at all. This quandary comes up most frequently in the case of the tired, fatigued, neurotic individual. There is, of course, no reason why he should not have gall-bladder disease as well as anyone; nevertheless he is too often the victim of a diagnosis that does not have disease for its basis. His parts are so often only *out-of-gear* and not really diseased. Patients who give a history of attacks of the characteristic agonizing pain, with flatulent dyspepsia in the interim, do not offer much difficulty in diagnosis.

In some instances it is not so simple to differentiate a diseased gall bladder from an angina or a coronary thrombosis, or below the diaphragm from a duodenal ulcer, chronic appendix, or even chronic pancreatitis. I have been impressed for many years with the great frequency with which gall bladder trouble makes itself known for the first time during a pregnancy or still more frequently during the first few weeks after delivery. It is known that there is usually an increase in the amount of cholesterol in the blood during pregnancy, and this occurrence is probably a part of the answer to the great frequency with which gall bladder trouble makes itself known at that time. Moreover, pyelitis or cystitis of *Bacillus Coli* origin is not an infrequent complication of pregnancy. We have, then, in pregnancy, two well established etiologic factors in gall-bladder disease—namely, infection and an increased amount of cholesterol in the

blood, and, possibly also stasis. Westphall believes that in the early stages of pregnancy there is vagal spasm of the neck of the gall bladder and of the sphincter of Oddi, causing stasis, and Mann and Higgins have shown that there is bile stasis in pregnant animals; all this goes very well, perhaps, with the well known fact that women are affected with gall stones at least twice as often as men. I am so convinced of this relationship that in obtaining a history of women who have digestive disorders I cannot emphasize enough the importance of asking specifically about attacks of what might have been called "acute indigestion," or "neuralgia" of the stomach, that may have been experienced during or soon after a pregnancy. If gall stone attacks have been recent, the information is usually volunteered, but where the attacks have occurred from fifteen to twenty years ago, and not since, it is only upon direct questioning that this valuable information, which may be the key to a diagnosis, is forthcoming. The matter of diagnosis is very important because it immediately leads us into the discussion of whether or not the results of gall bladder surgery justify the surgery. It has been mentioned in the literature, for instance, that in 25 per cent of operated cases the results are not satisfactory. As I see it, the results are dependent in the first place upon a proper discrimination in the selection of cases that are operated. Obviously, if surgery has been attempted in a case in which there is no pathology, a good result cannot be expected. It is, as above referred to, the fatigued, neurotic individual who is the usual victim for such unnecessary surgery. Such a patient should not be operated on anyway, as he will only be made worse by such treatment. Going a step farther along this line it may be said that the majority of cases that come to surgery with pathology have complaints that are entirely independent of real disease. I refer to fatigue, nervous (mental) and possibly physical, and all that goes with it. This may constitute, to be more or less definite, let us say from 25 to 50 per cent of the total of his complaints. If this is not recognized by the doctor and if it then is not cleared away in the post operative management, it is obvious that the patient will not get a 100 per cent good result, and the inference by both the physician and patient will be that the operation has not given entirely satisfactory results.

In the second place, I hope it will not be

taken as presumptuous to say that the surgery should be well done. The common duct is injured altogether too often, and stones in the common duct are easily overlooked. Other pathology, if present, should be taken care of if possible, and the appendix removed prophylactically, unless there is some reason for not removing it. The fact is, it is not infrequently also diseased. A duodenal ulcer may be present. And so on. I wish to mention incidentally that no small percentage of patients operated by us for cholecystic disease have been operated before for other conditions, usually the appendix, and not infrequently only shortly before. Gall bladder surgery may be difficult, and it should not be attempted except by experienced surgeons.

In the third place, good results cannot follow operating upon the so-called neglected cases, cases such as I referred to in which pathology has extended to the neighboring organs.

On the discussion then of the results of gall bladder surgery it can be said, in summary, that if proper discrimination is exercised in the diagnosis of gall-bladder disease, and if the surgery is well done, and if the cases that are operated are not neglected ones, the results will be as good as any I know of in surgery. I cannot refrain from saying that the incidence of cancer of the gall bladder is not such an infrequent one, and the occurrence of it is another instance of a complication of gall stones, since gall bladder cancer practically never occurs without gall stones to furnish the chronic irritation, chronic irritation being one of the known causes of cancer. The entire subject can be summed up by saying that gall bladder disease causes a great deal of ill health and many pathological deaths. Much of the suffering and many of the deaths could be avoided by intelligent and fair management of the victims of this disease.

PREVENTIVE MEDICINE AS CARED FOR BY THE FAMILY PHYSICIAN

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BATTLE CREEK, MICHIGAN

A community participation program with the physician playing an important part has been developed in Allegan, Barry and Eaton Counties, one consolidated school in Kalamazoo County, and the Ann J. Kellogg School in Battle Creek (all in Michigan). This program is sponsored by the W. K. Kellogg Foundation, actively engaged in Child Welfare, providing assistance in child health, education, recreation, all in a manner that reaches the entire community. In each one of the above counties, the first step taken was to present the entire program to the County Medical Society and obtain its full approval. After this procedure, the plan was voted on by the Board of Supervisors. Then with the endorsement of these two organizations, the County Health Unit was established in full coöperation with the State Department of Health. In each of the above counties, the Foundation has assisted financially. The personnel for these health units consists of a full time medical health officer who is in charge of the unit, a public health nurse, a sanitary engineer, and a clerk. This staff is supplemented by four extra nurses in each county. All medical and dental examinations are made by the local professional men and paid for by the Foundation.

The offices of the W. K. Kellogg Foundation are located at Battle Creek, Michi-

gan, and has a staff as follows: (1) Medical and Executive Director; (2) Associate Medical Director; (3) Associate Executive Director; (4) Director of Dental Education; (5) Director of Health Education; (6) Director of Mental Hygiene; (7) Director of Orthopedics; (8) Director of Social Service; (9) Director of Camps.

The members of this personnel act in an administrative capacity and assist in promoting the program. The nurses in the field are young women, all having R.N. degrees, public health training and teacher trained. These nurses do school nursing, assist teachers in their health program, and are capable of teaching in both lower grades and high schools. The program is definitely medical participation and is carried on in each county through the County Health Office, the Health Officer acting only in an administrative capacity becoming an educator

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in the community and correlating the results, as well as acting as executive secretary to the Medical Society. He arranges the schedule for both rural and urban schools to conduct physical examinations for all pre-school and school children; all examinations made by the local physician

The children found suffering from physical conditions that cannot be cared for by the family physician are referred by him to a specialist qualified to render the necessary service. The more common things encountered are: orthopedic, eye, ear, nose and throat defects and behavior problems. The



THE CHILDREN'S MEMORIAL HOSPITAL
W. K. KELLOGG FOUNDATION POST GRADUATE GROUP
October, 1933

First row (left to right)—Charles McIntyre, M.D., Hastings; T. A. Lucas, M.D., Mulliken; H. S. Wedell, M.D., Freeport; Charles Flinn, M.D., Allegan; Robert J. Walker, M.D., Saugatuck; Joseph Brennemann, M.D., Chief of Staff, Children's Memorial Hospital, Battle Creek; C. D. Huber, M.D., Charlotte; Thomas Wilensky, M.D., Eaton Rapids; J. B. Bradley, M.D., Eaton Rapids.

Second row (left to right)—Matthew Kinde, M.D.,* Hastings; Clarence Lathrop, M.D., Hastings; J. W. Davis, M.D.,* Charlotte; C. L. McLaughlin, M.D., Vermontville; V. J. Rickard, M.D., Charlotte; J. H. Van Ness, M.D., Allegan; James D. Campbell, M.D., Hopkins; M. H. Hamelink, M.D., Hamilton; H. A. Moyer, M.D., Charlotte.

Third row (left to right)—Eugene T. Brunson, M.D., Ganges; A. B. Mitchell, M.D.,* Allegan; T. C. Ferwerda, M.D., Wayland; L. E. Clark, M.D., Otsego; Harris Woodburne, M.D., Hastings; B. W. Morse, M.D., Allegan; J. E. Mahan, M.D., Allegan; Lewis F. Ladd, M.D., Martin; G. M. Byington, M.D.,† Battle Creek; I. M. Imthun, M.D., Grand Ledge.

assisted by the nurse assigned to the particular area.

In instances where physical examination reveals findings that need further attention, the child is referred to the family physician. The nurse contacts the family and assists the doctor. The parents are urged to be present at the time of examination. This we feel is important, placing the physician in contact with the family, and it gives him an opportunity to advise of any unusual findings and emphasize the importance of regular physical examinations.

*Health Officer.

†W. K. Kellogg Foundation.

program also includes smallpox vaccination and diphtheria immunization, these being done in the physician's office. Arrangements through the medical society are made to care for expense of children that are unable to pay for this service.

Preceding this part of the medical program, a meeting of each county medical society was held and the entire evening spent with the health officer and representatives from the W. K. Kellogg Foundation discussing the plan to be adopted; endorsement was given by each county group. After all, the problem is a local one and the professional men are in position to know what is

required and how best results can be obtained. With the aid of the physicians, suitable blanks have been developed and careful records are kept of each child during his entire school life. A record may contain, besides the medical examination, information regarding dentistry, eye, ear, nose, throat, pulmonary, heart, orthopedic, mental, social history, speech defect, camp life, x-ray, and others. A complete record furnishes much data and becomes invaluable. There are a number of children that come under observation in need of closer supervision over a period of time. These under-privileged children are given an opportunity to spend a period of time in a well supervised camp. The medical man, with assistance of the nurse in his community, selects these children and each child has a complete physical examination before he enters camp. During the camp period every effort is made to improve the child's health; all medical work is done by local physicians residing in the vicinity of the camp on a rotating service. While the child is at camp, the home is investigated by the Social Service Department and an effort to improve the same is made. Each child on his return home is kept under supervision for at least one year. Approximately 1,250 children have been cared for in camp since January 1, 1933.

In order to stimulate interest and speed the program up, an invitation was extended to the teachers of each county to spend a week-end at the W. K. Kellogg Foundation Camp at Pine Lake. Each county group of teachers was entertained separately from Friday night to Sunday evening. The encampments were attended by the County Health staff, nurses, and Foundation members. Speakers of national prominence were secured to talk on some phase of health education each Friday and Saturday night. Saturday was devoted to giving the teachers an opportunity to learn how a health program could be developed in their schools and the value of it. Sunday was carried on in a less strenuous manner. Recreation was also provided.

The County Medical Societies are assisted in securing desirable men to appear on their programs throughout the year, the subject presented selected by the program committee of the Society. In May, 1933, the Foundation Board established what is known as the Post Graduate Scholarship for physicians residing in the counties of Allegan, Barry and Eaton. This gives each

registered physician an opportunity of spending two weeks at a recognized graduate school of medicine with tuition and all other expense paid. Each man availing himself of this offer may select any subject he desires insofar as it is something that will be of assistance in conducting the local program. Further, he may also choose the school he wishes to attend. To date, fifty-three men have attended Post Graduate courses. The majority desired to have a general course in preventive and curative medicine. This was arranged in Chicago, the first course given in June, 1933, under the direction of Dr. Maurice L. Blatt and his staff at Cook County Hospital. The second group in October, 1933, were under the direction of Dr. Joseph Brenneman and his staff at Children's Memorial Hospital in Chicago. The two courses were very intensive, the schedule from 8:00 to 5:00 daily—practically a month's work in a period of two weeks. The more important subjects covered were as follows:

1. Preventive Pediatrics
2. Pediatric Technic
3. Contagious Diseases
4. The Newborn
5. Psychiatry
6. Speech Correction
7. Infant Feeding
8. X-ray
9. Medical Clinics
10. Neurology
11. Syphilis
12. Nephritis
13. Urology
14. Allergy
15. Diabetes
16. Skin Diseases
17. Blood Diseases
18. Childhood Tuberculosis
19. Heart Clinics
20. Orthopedics
21. Pathological Demonstrations.

Each course offered was well accepted by men attending; nearly all have written letters of appreciation on their return home. The teaching staff was the best obtainable and ample clinical material was available. There is no other activity as important as the Post Graduate Scholarship for physicians, giving to them up-to-date information especially on preventive medicine.

In conclusion, it would seem that a community participation program is a very satisfactory one. It develops local responsibility and places the problems where they belong. The people as a whole become interested and with a little encouragement and direction are willing to assist; the physicians are very coöperative and enthusiastic in carrying on the preventive medical program.

PULMONARY COMPLICATIONS FOLLOWING ANESTHESIA*

CLARK LEMLEY, M.D., F.A.C.S.†

This Report Comes from the Anesthesia Committee of Receiving Hospital, Detroit

Pulmonary complications in surgical patients following anesthesia present problems that require careful consideration. In the past few years numerous reports have been published and interest has been aroused in regard to these conditions that several years ago were accepted more or less as a matter of fact.

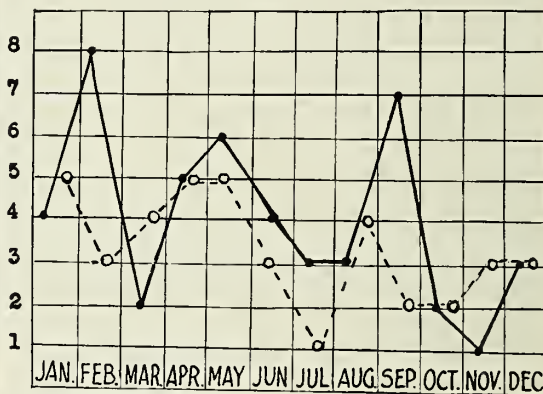
Pulmonary complications have been found to occur in from 1 per cent to 5 per cent of all postoperative cases. The data here presented cover the number of cases that occurred on the surgical division in the years 1931-1932 at Receiving Hospital in Detroit. Most of these cases were classed as major surgical procedures and occurred on general surgery, the specialty services of neurology, urology, gynecology and proctology. We are aware of the fact that pulmonary complications directly attributable to the anesthesia do occur in minor operative procedures.

In the twenty-four month period investigated there was a total of 8,212 anesthetics given. In this number there occurred eighty-seven definitely proven postoperative pulmonary complications with a fatal outcome in thirty-eight cases, giving a morbidity of 1 per cent for the entire group and a mortality of 44 per cent for the smaller group. This mortality figure is considerably higher than most of the figures presented in a table of authors compiled by Eliason and McLoughlin in 1932. Here are thirty-eight patients that had a fatal termination, sufficient evidence to emphasize to the surgical staff the seriousness of postoperative complications.

Chart I gives the incidence of pulmonary complications in various months, the solid line being 1931, the broken line 1932, a few less than in the previous year. Only those cases in which a definite diagnosis of pulmonary complications have been established are here reported. In fifty instances positive findings were obtained by x-ray. There were fifteen of the cases studied at autopsy and only three cases were studied and treated by bronchoscopic examination.

The average range of anesthetics per month varied between 300 and 375.

CHART I. MONTHLY INCIDENCE PULMONARY COMPLICATIONS



Total 1931—47

Total 1932—40

Chart II shows the types of anesthesia used and the number and kind of complications. Ether by the open drop method was most commonly used, spinal anesthesia was frequently used and one may note that the number of complications occurring are practically the same as for ether. In the past the anesthetic agent employed has been singled out as a direct causative factor in pulmonary complications. The figures in this series do not bear out that assertion.

Chart III shows the kind of operations and the number of complications encountered. Abdominal operations show a predominance in the incidence of postoperative pulmonary complications. Two patients in the genito-urinary group shown were subjected to the simplest of operative procedures. One a circumcision on a child, another a diagnostic cystoscopy. The youngest patient reported with pulmonary

*Read before the Section on Surgery at the 113th Annual Meeting of the Michigan State Medical Society at Grand Rapids, Michigan, Sept. 14, 1933.

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CHART II. TYPES OF ANESTHESIA—PULMONARY COMPLICATIONS

	Pneumonia			Atlts.	Plsy.	Abs.	Emp.	Inft.	Emb.	Total
	Lo.	Br.	Ter.							
Ether	16	2	4	7	3	1	1	2	1	37
Spinal	21	2	1	5	1	0	0	1	1	32
N20	6	1	0	0	1	1	0	0	0	9
N20 E.....	2	0	0	2	0	1	0	1	1	7
Spinal E.....	0	0	0	0	1	0	0	0	0	1
Spinal N20.....	0	0	0	0	1	0	0	0	0	1
Local	1	0	1	0	0	0	0	0	0	2

complications was thirteen months of age, a circumcision, and he recovered. The oldest patient was seventy-five years old and he expired the fifth day after a perineal prostatectomy. The average age of the patients who developed postoperative complications was thirty-three years. Fifty of the patients were between the ages of twenty and forty years.

Sixty-three per cent of this series occurred in male patients. It is an accepted axiom that male subjects show a higher incidence of respiratory infections. There is an appreciable increase in postoperative pulmonary complications in the male over the female, the ratio being 3:2.

Receiving Hospital is one of Detroit's largest charity institutions and is maintained for emergency medical and surgical conditions. In our analysis there were nineteen colored patients that developed postoperative pulmonary complications, with a fatal outcome in fifteen instances, a mortality rate of seventy-eight per cent for the group developing complications.

It has been reported frequently that pulmonary complications have a greater incidence following abdominal surgery. This report confirms that statement. In the two-year period investigated there were thirty-two hundred and forty laparotomies, followed by sixty-six instances of postoperative pulmonary complications. Of this number there were twenty-eight deaths, a mortality of 42 per cent. This latter figure is slightly less than the total percentage mortality of the entire series, which was 44 per cent.

As to the causative factors involved in pulmonary complications, there are several that have been advanced with clinical reports in support. Henderson describes "the acapnial position of the lungs as one near or below that of normal expiration, a condition of prolonged deflation. In this position the thoracic, diaphragmatic and abdominal

CHART III. OPERATIONS AND COMPLICATIONS

Operations on	Total Pulm.	
	Comp.	Mortality
Appendix—acute	20	5
Appendix—chronic	5	2
Hernia	12	2
Pelvic Organs	10	5
Stomach	7	2
Biliary Tract	5	3
Thyroid	5	3
Extremities	5	2
Genito-Urinary	5	3
G.S.W. abd.....	5	3
Prostate	2	2
Kidney	1	1
Large Bowel.....	1	1
Small Bowel.....	1	0
Obstructions	1	1
Spine	1	0
Rectum and Anus.....	1	0
Chest	1	0
Generalized Peritonitis	1	0

movements of breathing are carried on at such a low level as to leave some parts of the lung unventilated, thereby permitting an accumulation of mucus, blocking of airways depression of tonus in those muscles which normally keep the thorax expanded. This acapnial atonic state applies to all muscles of the body. It affords an explanation not only of atelectasis but also of postoperative shock. Loss of general tonus permits stagnation of blood in the venules, it contributes to the development of atelectasis, for any slowing of the circulation decreases oxygen content of venous blood and the lowered gas pressure in this blood promotes absorption of gases from any occluded spaces in the lung. Inhalation of carbon dioxide increases the general tonus of the body and rapidly restores the blood alkali." Muller, Overhalt and Pendergrass recently have shown in a series of patients examined by x-ray, the following day after abdominal operations, that there was an elevation of the diaphragm and reduction in its movements. They further showed that there was as much as 75 per cent reduction in

the lung capacity. This favors accumulation of secretion in the bronchial tree and subsequent blockage of a bronchus.

Hudson and Jarre with their quick series x-ray films have demonstrated clearly the peristaltic-like movements in the bronchial tree after the injection of an opaque oil. It would seem that the excessive use of strong sedatives would tend to decrease the peristaltic movements, favoring accumulation of secretions and possible subsequent blockage of the bronchi. There are many other extraneous factors in the causation of postoperative pulmonary complications, such as tight abdominal dressings, allowing the patient to slump down in bed when placed in semi-sitting posture, decreased fluid intake and the excessive use of strong sedatives.

Is it not possible that the routine use of morphine and atropine before operation and the rather injudicious use of morphine post-operatively may be factors leading to such complications as those under discussion? There are many other factors that could be considered.

Postoperative pulmonary complications do occur more frequently than one would expect. Undoubtedly many of these conditions clear up with little or no treatment. The majority develop into serious conditions that require careful systematic care. Those in charge of the post-surgical care should be educated to be on the alert for respiratory conditions, if the incidence and mortality rate are to be lowered. Upper respiratory complications require symptomatic treatment. Conditions that develop in the lungs proper require immediate and persistent attention. Frequent change in position with deep breathing exercises may suffice. The frequent use of carbon dioxide inhalations of a 30 per cent mixture has almost a specific action against the development of atelectasis. If these efforts have been carried out efficiently, and the desired results have not been obtained, bronchoscopic intervention should be resorted to at an early date. Excessive tenacious secretions can be removed with a minimum of distress to the patient, oftentimes avoiding a pneumonitic process or a lung abscess. It

may be necessary to do repeated bronchoscopic aspirations.

SUMMARY

1. Eighty-two hundred and twelve anesthetics were given in 1931-1932. A total of eighty-seven postoperative complications occurred, with thirty-eight fatalities.
2. Postoperative morbidity was 1 per cent.
3. Forty-four per cent of the patients that developed postoperative pulmonary complications had fatal outcome.
4. The anesthetic agent plays little or no part as a causative factor in postoperative pulmonary complications.
5. The greatest number of complications followed abdominal surgery.
6. Ratio of male to female was 3:2.
7. A suggested outline for the post-operative care of pulmonary complications is presented.

CONCLUSIONS

1. A program of prevention should be followed closely. This would include the treatment and prevention of any upper respiratory infection.
 - a. Overindulgence of depressing drugs such as morphine, atropine and the barbituric acid derivatives should be avoided.
 - b. Promotion of deep breathing by turning the patient from side to side. Frequent administration of carbon dioxide mixtures.
 - c. Full and early recourse to the x-ray for diagnostic purposes.
2. When above measures fail to prevent or relieve a developing pulmonary complication, the patient is entitled to the free access to the bronchoscopist.

REFERENCES

1. Eliason, E. L., and McLoughlin, Chas.: Postoperative pulmonary complications. *Surg., Gyn. & Obst.*, 1932, 55:716.
2. Henderson, Y.: Acapnia as a factor in postoperative shock, atelectasis and pneumonia. *J. A. M. A.*, 1930, 95:573.
3. Hudson, W. A., and Jarre, Hans: Functional studies of tracheo-bronchial tree with aid of Cin-ex camera. *Brit. Jour. Rad.* (Nov.), 1929, new series, 2:23.
4. Hudson, W. A., and Jarre, Hans: Motor phenomena of tracheo-bronchial tree. Read at the meeting of the National Tuberculosis Association, Syracuse, New York, May 13, 1931.
5. Muller, G. P., Overhalt, R. H., and Pendergrass, E. P.: Postoperative hypoventilation. *Arch. Surg.*, 1929, 19: 1322.

LYMPHO-SARCOMA INVADING THE ORBIT

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DETROIT, MICHIGAN

Orbital tumors are comparatively rare. At Morefield's Hospital in 1930, there were 52,372 out-patients. In this group of patients there was only one case of orbital neoplasm diagnosed. In the same year, at the New York Eye and Ear Infirmary, there were 35,869 out-patients; nine orbital tumors were diagnosed in this group.

CASE REPORT

J. N., male, aged fifty, entered Massachusetts Eye and Ear Infirmary, November 9, 1924. Family history: negative. Past history: general health good. Gonorrhea ten years ago. Chancres denied. There had been no loss of weight and no serious illness up to the onset of the present illness.

Present Illness: Chief complaint, pain in the left eye. Five weeks previous to entrance patient had an attack of "la grippe," with nasal discharge. The eye became sore at the same time. It improved in two days, but became painful three weeks later. Treated by local medical doctor with hot compresses. Pain steadily increased. About two weeks prior to entrance, patient noticed protrusion of the left eye, which had increased. Decreased vision and diminution of motility.

Physical Examination: A well-nourished male, lying quietly in bed. The sinuses transilluminated well. There was no evidence of nasal infection.

The tonsils were not enlarged. There were many teeth missing and much pyorrhea was present. The thyroid was not enlarged, and there were no glandular enlargements. The heart, lungs and reflexes were normal. Pulse, 72. Temperature, 98.6. Respiration, 18. Blood pressure, 140/90.

Ocular Examination: O.D. Vision, 20/30, improved to 20/20 with correcting lenses. Extraocular movements were normal. There was no ptosis. Conjunctiva was not congested. There was no displacement of the plica semilunaris. The cornea was of normal size, and of normal curvature, and there were no surface abrasions or ulcerations. Tactile sensation was normal. Anterior chamber was of normal depth, and there were no increased cells. The iris was of dark brown color. The pupil was 4 mm. in diameter and reacted promptly to light, both direct and consensual, and to accommodation. The fundus showed a moderate sclerosis of the arteries, with some hyperemia of the disc. The vitreous was normal. The visual field was normal in its periphery and centrally. Hertel exophthalmometer reading, 14.

O.S. Vision 20/100, not improved. Hertel exophthalmometer reading, 28. The conjunctiva was extremely edematous and red, to the point that it was almost over the edge of the lower lid. Ocular motility was almost completely paralyzed. The upper lid was markedly ptosed. The intraocular tension was normal. There was no tenderness of the globe to pressure and with a stethoscope no bruit could be heard, and no thrill was palpable. The pupil was 8 mm. in diameter, and reacted promptly to light, both direct and consensual, and feebly to accommodation. In the anterior portion of the vitreous there were many snow-ball-like bodies (asteroid hyalitis). The fundus showed a marked venous engorgement and disc hyperemia. There was no choking of the disc,

and no hemorrhages, or exudate. There was no edema over the mastoid area.

Laboratory Findings: Blood Wassermann and urine negative. White blood count, 7,500. Polymorphonuclear leukocytes, 65 per cent. Small and large lymphocytes, 35 per cent. No eosinophiles, x-ray of the sinuses negative. Basal metabolism not done.

Clinical Course.—There was no temperature at any time, and the patient felt well at all times. The case history suggested thrombosis of the cavernous sinuses, except that the patient did not seem to be ill, other than for his ocular pain. The x-ray and nose and throat examinations were entirely negative. The diagnosis of orbital new growth was made. Vision continued to decrease to the point where on November 14, 1924, the pupil did not react well to light and light projection was present inferiorly only. The pain increased, and chemosis of the lower conjunctiva increased to the point where the conjunctiva was extruded over the lower lid. It was deemed advisable to do an exploratory operation of the orbit.

On November 18, 1924, a Kroenlein operation was done on the left orbit. The lateral wall of the orbit was resected, the external rectus muscle divided, after which a firm nodular tumor could be palpated in the muscle cone, at or near the apex and extending around the optic nerve nasally. This tumor was removed by finger dissection, and the periosteum closed with catgut, the skin and muscles with silk and catgut.

The pathological report of the excised tissue, made by Dr. F. H. Verhoeff, was "lympho-sarcoma invading the orbit."

On December 3, 1924, an exenteration of the left orbit was done. This was very difficult because of the previous operative interference, and there was a tremendous amount of hemorrhage and tissue reaction. The inferior orbital plate was eroded and so was the lateral wall of the ethmoid.

The pathological report on the orbital contents, made by Dr. F. H. Verhoeff, was "lympho-sarcoma; exposure keratitis with purulent iritis; optic disc, slightly cupped."

On December 5, 1924, the patient was seen by Dr. Green, of the Massachusetts General Hospital X-ray Department, who advised x-ray therapy. Three treatments of 55 minutes each were given between December, 1924, and July, 1925.

On August 11, 1932, he reported by letter that the small cavity extending from the orbit into the nose never healed completely, and that there had been no recurrence of the tumor, and that his general health is excellent, and he has had no further trouble whatsoever.

Differential Diagnosis.—The following conditions were considered:

1. Thrombosis of the cavernous sinus.
2. Sinusitis.
3. Arterial aneurysm.
4. Periostitis.
5. Trichiniasis.
6. Orbital tumor.

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1. In thrombosis of the cavernous sinuses, the patient would present a picture of a more grave illness, and there would have been a venous engorgement of the other eye.

2. The absence of pus in the nasal cavities, the negative local examination, and the negative x-ray plates ruled out sinusitis.

3. Although the absence of a pulsation or bruit

did not entirely eliminate arterial aneurism, they made it very improbable.

4. In a periostitis the eyeball is not usually protruded almost directly forward. The indication was that something in the muscle cone was causing the protrusion.

5. Trichiniasis was ruled out by the history, the absence of eosinophilia and the presence of the normal temperature.

6. By exclusion the diagnosis of orbital tumor was considered to be most likely. The point against this was the short duration from a history point of view. This, of course, was not accurate. It is probable that the limitation of motion and the exophthalmia were present for some time prior to the date set by the patient.

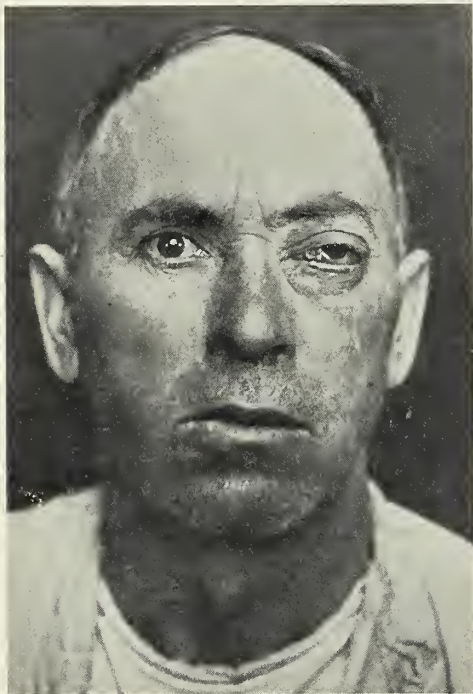


Fig. 1. November 16, 1924. Exophthalmos, edema of the conjunctive and ptosis of the left eye.

Comment.—The case presented was diagnosed by exclusion. There was extreme chemosis of the conjunctiva with marked exophthalmos and immobility. The temperature, blood count, x-rays of the sinuses and laboratory determinations were normal. The tumor proved to be of a malignant type, and the fact that it was extending into the orbit called for the immediate exenteration. The fact that an erosion was present into the lower orbital well and ethmoid indicated that the tumor had been growing for a considerable length of time. The complete recovery following the exenteration and x-ray treatments demonstrated that even a malignant tumor with extensions beyond the orbit responded to the therapeutic measures employed, and that complete reliance cannot be placed on x-rays for diagnostic interpretations. In the x-ray the floor of the orbit should have shown the extending process.

THE PRACTICE OF MEDICINE IN GERMANY*

ARTHUR H. MOLLMANN, M.D.†

GRAND RAPIDS, MICHIGAN

Dr. J. W. Rigterink asked me to read to you a paper on the Practice of Medicine in Germany. I take great pleasure in doing so, since my own experience of about four years' practice in Germany and about eleven years in the United States has taught me that there are some decided differences in the practice of medicine in these two countries, which I believe are of some interest to you. By calling your attention to what from the American viewpoint might be called "different," it will, in my opinion, be the quickest way to cover the question. Of special interest are three subjects:

*Feature paper as delivered before the St. Mary's Hospital Staff Meeting.

†Dr. Mollmann received his medical education at the Universities of Heidelberg, Munich and Wurzburg, graduating from Wurzburg in 1919. For two years he was assistant in head surgery in the clinic of Geheimrat Terburggen in Hagen, and for one year assisted in general surgery in various surgical clinics in Germany. In 1923 he obtained the American license in Topeka, Kansas, and at present is practicing surgery of the head in Grand Rapids.

1. The medical training.
 2. The insurance system.
 3. Selected items of interest about a few major medical problems in Germany.
- At the German universities the education

in medicine covers a minimum of five years. The clinical subjects are treated in practically the same manner as in the United States. But it appears to me that the basic sciences as physics and chemistry, also zoology and botany, including some mathematics, are covered more thoroughly. These subjects are not taught by medical men, but by the chiefs of the respective departments of the universities, who also conduct the examinations in these subjects for medical students. There are only two examinations: one after two and one-half years called the "Phvsicum" and the other after five years called the "Final" examination. During these five years, the German student enjoys a remarkable freedom which is rather unknown in other universities. He chooses his teachers, his courses, his hours of work and of play. If he prefers to study at home, he may do so; if he prefers to attend the lectures, it is up to him to decide. There are no roll calls. In fact he may do as much or as little as he wishes to. Nobody cares. He is encouraged to travel from one university to the other that he may become acquainted with other teachers and other viewpoints. This student may stay at home for an entire semester and he will not get in trouble about his matriculation. But as soon as he asks for admission to any examination, matters are entirely different. He either knows or fails. Naturally under this system of remarkable freedom, many young students neglect their studies and go astray. But it is the opinion of the German educators that the academic youth has to know what he wants.

The internship is of the rotation type, as in the United States. The intern is usually given one or two wards, where he has to do all examinations, all laboratory work and the writing of records of his ward cases. For advice he asks his supervisors, to whom he is responsible.

Passing the final examination at the university gives the title physician. There are no State Board examinations. The degree of doctor is a purely academic degree and obtained only by writing a thesis, which usually is accomplished in from six to twelve months. After the internship is completed by a short legal procedure the right to practice medicine as general practitioner is obtained.

If the general practitioner is so inclined and has a little money, he takes additional

training in some specialty at the university clinics or at some large municipal hospital. In order to call himself a specialist he has to prove additional training of at least two years in the specialties of internal medicine, or in ear, nose and throat diseases, or in obstetrics and gynecology or dermatology. About six years ago the time of specialization was increased to three years in the specialties mentioned. In order to call himself a general surgeon, he has to prove four years training in general surgery. These rules are rigidly enforced by the German medical association.

The professorship is obtained practically only by a prolonged study in some specialty at the university clinics. The average time for the advancement to professorship is twelve to fifteen years. This means, that a professorship under the age of forty is practically unknown.

So much about the academic life. I believe you will be far more interested in the German medical insurance system, since there seem to be tendencies in the United States for a generalized health insurance system.

The German medical insurance system takes its origin from a recommendation of the old chancellor von Bismarck. He stated in 1884: "If the working man is healthy, give him opportunity for work; if he is ill, give him medical attention; if he is old, give him a pension as long as he lives." When Bismarck made this remarkable recommendation to the German government, he did not know what would develop out of it. At first in a few small bureaucratic offices, money was collected from the manufacturers for the purpose of giving first medical aid to the working man. Everything was quite idealistic, but the bureaucratic clerks and the political wire pullers very soon learned to recognize the opportunity to gain influence and power. The insurance agencies gradually obtained the aid of governmental legislation which was most favorable for the expansion of the insurance system. Very gradually a large political machinery developed. Not only working men, but about 90 per cent of all German citizens of all walks of life were included in the health insurance system. By government law a fair percentage of money was taken directly out of their salary. The money traveled at first to the insurance agencies. After the insurance agents were

paid, and funds were created for the expansion of the insurance system, the rest of the money was divided up among the doctors, druggists, and hospitals in a ratio as doctors, druggists and hospitals had participated in the care of the sick. During the last twenty years under the strong influence of marxistic regime, the gigantic insurance system in Germany became the welcome tool of its powerful leaders and managers to still increase their power for the sole egoistic purpose of political influence. The immense system ceased to be an organization for the purpose of general welfare.

Instead of the patient calling his doctor for medical aid, the patient by force of the law calls and pays his insurance organization, which in turn hires and selects the doctor, the hospital and the druggist.

Minimum fees were calculated for the doctors, the druggists, and the hospitals. Before patients could go to a doctor, they first had to obtain from the office of the insurance agencies a slip of paper, guaranteeing to the doctor the minimum fee. The insurance agencies had definite office hours, where the patients or their relatives had to stand in line and wait for the slip of paper. I know of instances when it was necessary for the police forces to guard the line of the waiting people. If in the judgment of the health insurance agent the patient had just a minor disease, he was sent in to some other room of the insurance building where some nurse would apply a diathermy machine, or give an electric light treatment or some form of hot air treatment; this method of treatment was cheaper for the insurance agencies than to hire a doctor at the minimum fee. A patient was of course not supposed to get sick while there were no office hours. Should this, however, occur and the patient see his doctor without first obtaining the slip, then the doctor would have no guarantee for ever obtaining his minimum fee. And the patient would have duly to explain to the insurance agent why he could not first notify the office of the insurance agent. And often enough the insurance agent would act very stubborn in guaranteeing the medical expenses except in cases of accident, where even an insurance agent would without difficulty understand the need of immediate medical attention.

During the past twenty years, the funds of the insurance system increased so tremendously, that they built up most expen-

sive mansions and palaces for their offices in practically all cities. The luxury in many of these palaces is so pronounced that it provokes the sharpest criticism of all right thinking citizens who witness the serious poverty of all hospitals, medical centers and private medical offices, which still are the proper places for the care of the sick.

Now, how does the system affect the welfare of the patient? The patient had medical attention in all cases of serious illness, as he should have it, but also the patient was at liberty to call a doctor for any little discomfort for which ordinarily he would not and ought not call a doctor. Experience has shown that a great number of patients did take advantage and called him upon the slightest provocation, as for instance a little headache, nose bleed, sore feet or sore fingers, for himself or his family at any time of the day, and especially of the night. This condition, instead of being duly corrected, soon became a welcome talking point to advertise the humanitarian mission of the insurance system to the common people and to gain their hearts for socialism and marxism. If a working man was clever, and many soon learned to be, he had always some little ailment when his work in the shop became strenuous; or when he had a disagreement with his superiors. This type of working man also knew too well that a most painstaking physical examination may reveal nothing; and that he would be given the benefit of the doubt as long as he stuck to his story. The number of this type of patient was legion. Experience had shown that insurance agencies were very lenient and paid rather than lose the socialistic vote of a working man who might become angry and turn against the entire system.

Of course the patient paid very highly for these services, but since the money was taken out of his salary before he got it, he did not notice it as painfully as he should. Besides, the man who did work also paid the insurance for the man who was out of work or did not want to work. The actual payments ranged from 5 to 10 per cent of the income; the high percentage payments were made by the little income and the low percentage payments by the high income. A short mathematical figuring shows that 5 per cent of an income paid annually will accumulate to the whole value of the income in twelve years at the common 5 per cent interest rates. At the 10 per cent ratio, the

whole income of one year will be represented in seven and one-half years. Any one knows that the medical attention at minimum fees for the average income does not cost an entire yearly income every seven and one-half or twelve years out of the pocket of each wage earning person.

How did this system affect the doctors? Since about 90 per cent of all citizens belong to the insurance system, a doctor had practically no chance to make a living unless he was admitted to, or, more correctly, was hired by, the insurance agencies. As there were many doctors, the insurance agencies soon began to restrict their number of doctors. And the unfortunate doctors who were not admitted to insurances had the choice between only three possibilities for a living. Firstly, they could defy all insurances and try to make a living from the 10 per cent of citizens who did not belong to any insurance. This could be attempted only by young doctors who had a lot of money. Secondly, they could stay for five or ten years or even more, in large hospitals or in university centers and obtain an enviable training and experience in some specialty. This was the choice of a young doctor who had interest in institutional work and a fairly good financial backing. Otherwise he could not afford it. The third possibility was the most pitiful condition of young doctors who had no money and were not admitted to the insurance system, and to whom there was no other choice than to underbid the minimum fees of the insurances, or to make a dishonest fee-splitting private contract with a dishonest insurance agent.

Let us consider the doctor who is admitted to the insurance system. What are these minimum fees? If the dollar be considered at its gold value, then the insurance doctor—he may be a general practitioner or a specialist—would receive for the ordinary office call about 25 cents. For the ordinary house call 45 cents. The surgeon would receive for a tonsillectomy \$5.00, for the uncomplicated appendectomy or herniotomy \$12.00 for a cholecystectomy or a mastoidectomy about \$20.00.

If one considers that the ordinary commodity prices for food are about 25 to 50 per cent lower in Germany, these fees are not so low as they appear. But textiles cost just as much in Germany as in the United States, and automobiles and gasoline costs

about twice as much. Now you will understand that the general practitioner has to have about thirty to forty patients a day to make a living. In order to get them, he has to ask his patients to return to his office for treatment, unduly frequently. As a natural result he has very little time to spend with the individual patient and accordingly the patient receives a more or less superficial and less exacting examination. The doctor is by no means at liberty to prescribe for his patients as he deems proper. The insurance agencies flatly refuse to pay for expensive medicines, or make the patient pay an extra fee. For instance, the insurances do not pay for avertin, if avertin anesthesia is given. In the famous clinics of Professors Sudeck and Brauer in Hamburg the insurance will pay for an x-ray of a chest only if Professor Sudeck or Professor Brauer state by their personal signature the necessity of the x-ray.

You will now understand why the German medical profession has several times revolted against the outrages of these insurances which have broken the natural relation between patient and doctor, have undermined his dignity and professional standing, which has crippled his services to society at large. But strikes against the insurances were always without success, because the insurances were too wealthy and powerful. A few years ago the insurance agencies hired special physicians, who had nothing else to do but to watch that doctors did not prescribe expensive medicines, or treat their patients too long or use unnecessary number of films for their x-ray pictures, or an unnecessary number of bandages for the surgical dressings.

Now we can draw a few conclusions:

1. The German Medical insurance system in its present form has failed in its very objective as a service to the people.

2. The patient, instead of paying to the doctor of his choice a respectable fee within his means, pays an extravagant fee, of which the greater part goes to a political machine and a small part to a doctor whom he did not choose, and he has to pay extra fee for certain medicines and x-rays.

3. The doctor receives a humiliating fee which cripples his ambition and decreases his interest in academic advancement. He is a hired tool of a huge political system.

4. The German insurance system is an excellent example of the disastrous political

exploitation of the natural private relations between patients and doctors by a group of shrewd politicians for the purpose of gaining tremendous political power and all that for the apparent justification and glorification of the socialistic régime of Karl Marx.

Now a few selected items about a few major medical problems in Germany, which I believe are of interest. The items naturally must be very selected and no claim is made for completeness.

In the United States 9 per cent of all deaths are caused by tuberculosis; in Germany 12 per cent. This figure has been explained by the congestion in the cities. During and immediately after the war the deaths by tuberculosis increased to the fearful figure of about 20 per cent, and are at present again about 12 per cent. Aside from the usual treatment with sunshine, rest, good food and pneumothorax, the dissection of the phrenic nerve as recommended by Sauerbruch is done on a large scale with good results. Thoracoplasty is done quite frequently and not only in the last stages. Kossel in Heidelberg brought out the significant fact in his bacteriological studies that in the lymph-nodes of the mesenterium and the neck the bovine bacillus was found just as frequently as the human bacillus. Laryngologists as Spiess and Terbruggen maintain that there is such a thing as a primary tuberculosis of the larynx, at least primary to the infection of the lungs. In Munich in the clinic of F. Muller, I learned that the search for the tuberculosis bacilli by the microscope is rendered easier by the use of the dark field upon specimens which were stained in the usual manner with carbofuchsin and a contrast stain. The Zeiss firm has constructed a new condenser which by moving a little lever can be converted from a light field to a dark field and again to a light field. This instrument works very well.

The syphilitic problem in Germany is interesting. My friends who practice dermatology and internal medicine tell me that primary and secondary lesions have practically disappeared from their offices. This statement is of course not correct for metropolitan cities and seaports. For the diagnosis of the primary and secondary lesions the dark field is used a great deal and if this should fail the Giemsa stain is applied to a drop of serum obtained from the margin of the doubtful lymph gland by a small

aspirating needle, and the spirochetes are demonstrated in about 90% of the positive cases. You know that four years ago at the international serological congress in Copenhagen the Wassermann reaction was about discontinued as being less reliable than the flocculation tests. Among the many flocculation tests, Kahn's test obtained the best results. It is the degree of flocculation in these tests which allows the diagnosis. Recently Meinecke has published a test by which not the amount of flocculation but the degree of clarification allows the reading of the result. This test is now used on a large scale in Germany.

Concerning the diagnosis and treatment of the lobar pneumonia, the American method of differentiating four types of pneumococci by agglutination and the use of anti-pneumococci serum for Type 1 and Type 2 is accepted and used in German clinics with great enthusiasm. Rosenau states that the pneumococcus III is identical with Schottmuller's streptococcus mucosus because the latter coccus is soluble in ox-bile and therefore the name streptococcus is a misnomer. Schottmuller, however, states that his bacillus is not soluble in bile and therefore is streptococcus. This question is not yet settled.

Since films are expensive, there are no films used for the teleoroentgenological measurement of the size of the heart. A transparent paper is placed over the fluorescent screen and the outline of the heart is traced by a red pencil. Then certain mathematical lines are drawn on the paper and the findings computed according to the age, size, weight and chest circumference of the patient. At present the tables of Gotthardt are used extensively. Since the apparatus of Einthoven for an electrocardiogram is very expensive, the study of arrhythmic heart is frequently done by simultaneous tracings of the heart-beat and the waves of the jugular vein in order to analyze the phases of the ventricles and the auricles.

In surgery one point about local anesthesia is of interest. For about ten years in the leading clinics, novocain has been dissolved in a watery solution containing 7 grams sodium chloride and 4 grams potassium sulphate per liter. The addition of potassium sulphate increases the anesthesia effect and at the same time decreases the toxicity of novocain. This method is very commend-

able. Avertin anesthesia is used extensively as basic anesthesia and a few drops of ether upon a mask are often added. Surgical diathermia is used a great deal for the removal of malignant tumors, because the current seals the lymphatics as it cuts them, and it never transfers living tumor cells upon healthy tissue.

In obstetrics the twilight sleep of Gauss has been entirely discontinued. Avertin is at present in great favor. The number of cesarean sections has increased very greatly during the past 15 years in order to avoid the dangerous high forceps, difficult versions and craniotomies. The indications for the classical and the low cesarean section are about the same as in the United States. Killand's forceps is quite in favor. In cases of serious hemorrhage, Momburg's method is occasionally used, as it gives the surgeon

time to make an accurate diagnosis about atonia, cervical tears or placental pieces left in the uterus. Momburg's method is not so much in favor in the United States.

The very bad food supply in Germany during the world's war has taught two facts to the obstetrician. Firstly the weight of the child is not influenced by poor feeding of the mother. Secondly, there was a very considerable decrease of the number of cases of eclampsia during the war. The vegetable diet of the war must have been as much a means of prophylaxis of eclampsia as the milk diet is. Now, milk contains a great deal of protein, and the only item in common between the milk diet and the German war diet is the very high content in inorganic salt. Among these salts much discussion has been placed around the calcium.

THE NEOARSPHENAMIN TREATMENT OF INTESTINAL PROTOZOAL DISEASES IN MAN WITH SPECIAL REFERENCE TO AMEBIC DYSENTERY*

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In 1919 in collaboration with a number of local physicians the writer undertook an investigation of the value of intravenous injections of neoarsphenamin in the treatment of various protozoal infections of the intestines of man.

During a six year period prior to the beginning of this work, but at the time unknown to the writer, at least fourteen investigators in various parts of the world attempted to use arsphenamin and neoarsphenamin for the treatment of amebic dysentery. The reported results of the treatment are extremely variable. A study of the reports, however, reveals the significant fact that when comparatively large initial doses (0.6 gram or more) were given intravenously apparently beneficial results were obtained, whereas if small initial doses were given intravenously, even when these were gradually increased to as much as 0.9 gram during a course of treatment, or when the dose was administered as a lavage, the organisms were but little affected. In the work here reported large initial doses were used at the outset. The use of large doses was suggested by the report of Kofoed³ and his associates that the cysts of *Giardia muris* (a flagellate) disappeared from the feces of

infected rats following intravenous injections of heavy doses of neoarsphenamin.

The first attempts by the writer to utilize intravenous injections of neoarsphenamin for the treatment of intestinal protozoal infections were carried out in collaboration with Dr. E. I. Carr of Lansing in a case of giardiasis.¹ This work showed that, while a single injection of 0.6 gram of neoarsphenamin caused a temporary disappearance of the cysts of *giardia* from the stool of the patient, three intravenous injections of 0.6 gram apparently completely eliminated the organism. In subsequent work in which various physicians coöperated (notably Dr. Oscar A. Bruegel of East

*Approved for publication as JOURNAL article No. 173 (n.s.) from Michigan Agricultural Experiment Station.

ENDAMEBA DYSENTERIÆ (HISTOLYTICAL)

Case	Stage of organism	Number of Injections	Stool examinations following first injection (Consecutive stool)			6 days after final injection	1 month after final injection	6 months after final injection	9 months after final injection	1 year after final injection
			1st	2nd	3rd					
A. D. C.	6 mic. cyst	2	+	—	—	...	6 —	...	...
E. W. C.	cyst	1	+	—	—	...	3 —	...	...
M. R. C.	cyst	1	+	—	—	...	—	...	...
A. R. D.	cyst	1	+	+	—	—	4 —	6 —	...	...
H. E. E.	cyst	1	+	—	—	...	3 —	...	...
W. C. E.	cyst	1	—	—	—	...	4 —	...	...
A. J. F.	cyst	1	—	—	—	...	3 —	...	...
O. F.	cyst	3	+	—	—	—	6 —	6 —	10 —	10 — *
L. J. M.	cyst	1	+	—	—	...	3 —	...	...
W. E. O.	cyst	1	+	—	—	...	3 —	...	...
S. S.	motile	5	+	—	—	—	6 —	6 —	...	
H. T.	cyst	1	+	—	—	...	3 —	...	...
R. H. W.	cyst	1	+	—	—	...	3 —	...	...
L. W. Z.	cyst	3	+	+	—	...	6 —	...	...
L. P. B.	cyst	1 0.3G.	+	—	—	...	3 —	...	+	...
L. P. B.	cyst	3	+	+	—	...	6 —	...	...	3 —
F. F.	cyst	3	+	—	—	—	6 —	6 —	...	6 — *

EXPLANATION OF SIGNS IN THE ABOVE TABLE

*These two cases were examined several times over a period of ten years. From six to ten consecutive stools were examined each time.

+ indicates presence of the organism in the stool.

— indicates absence of the organism.

... indicates no data.

The numerals at the left of the minus sign indicate the number of consecutive stools examined.

Lansing and Drs. W. E. McNamara, E. I. Carr, G. F. Bauch and C. A. Stimpson of Lansing) several hundred infections involving eleven different species of intestinal protozoa of man have been successfully treated with three intravenous injections of from 0.6 to 0.9 gram of neoarsphenamin at five-day intervals.

Protocols of the data collected during the first year of these investigations were presented at the Michigan Academy of Science at Ann Arbor (1921) but publication of these data was withheld for several reasons, principally among which was the advisability of checking up on the results of treatment by the examination of a number of consecutive stools over a period of more than one year, especially in cases of *Endameba dysenteriae (histolytica)*, which at that time was not endemic in Michigan and reinfections, therefore, unlikely. In view of the recent epidemic of amebic dysentery in Chicago, however, further delay in the

publication of at least that part of the work dealing with the dysenteric ameba would appear to be inexcusable.

The dysenteric ameba is apparently more easily eliminated from the digestive tract by the use of intravenous injections of neoarsphenamin than some of the other intestinal protozoa. In the initial experiments on this organism, the protocol of which is presented below, 0.6 gram was used as a standard dose. In the work with other organisms, however, it was observed that some of these, especially the trichomonads and spirochetes required as much as 0.9 gram to bring about their complete elimination. Since the microscopic examination of a single stool or even the examination of a series of stools may fail to reveal all of the intestinal protozoa which may be present in any given case, recommendations of maximum doses (0.9 grams in the case of male and 0.75 in the case of female patients) in the case of all intestinal protozoal

infections would seem to be desirable and have been the standard recommendations from this laboratory for the past thirteen years.

Following the intravenous injection of 0.6 gram of neoarsphenamin invariably the organisms were absent from the third consecutive stool. Often these were not found in the second stool. Even in the case where 0.3 gram was injected (first treatment of case L.P.B.) the organisms were absent from the second and third stools following the injection. They also were absent from three consecutive stools examined one month after the injection but found in stools examined nine months after the injection. In the subsequent treatment three injections of 0.6 gram were given at five day intervals. This case was examined at intervals for several years and no organisms were found.

The above protocol merely presents data on the initial experimental cases. During the past fourteen years a large number of cases have been treated with three intravenous injections of from 0.6 to 0.9 gram of neoarsphenamin. In each case the symptoms rapidly disappeared, even in cases of liver abscesses and arthritis. Invariably the organisms disappeared and remained absent from the patients' stools.

Many physicians hesitate to administer intravenously large initial doses of neoarsphenamin for fear that the patient may be sensitive to arsenicals. In our experience during the past fourteen years no ill effects other than a slight chill were observed following injections of 0.9 gram provided that

1. The neoarsphenamin was of recent manufacture.

2. The dose was administered immediately after dissolving.

3. The dose was all placed into the blood stream and none lost in the other tissues.

The amount of water injected with the neoarsphenamin appears to be unimportant. Some physicians use 100 cubic centimeters, others only ten or twelve with equally good results. Also the method of administration, whether by the gravity method or the syringe method, seems to be unimportant.

REFERENCES

1. Carr, E. I., and Chandler, W. L.: Successful treatment of giardiasis in man with neoarsphenamin. *J. A. M. A.*, 74:1444-1445 (May 22), 1920.
2. Kantor, John L.: *Lamblia (Giardia) infection associated with cholecystitis.* Reprint *Arch. Int. Med.*, 32: 693-704 (Nov.), 1923.
3. Kofoid, C. A., Boeck, W. C., Minnich, D. E., and Rogers, J. H.: On the treatment of giardiasis in rats with arsenobenzol. *J. Med. Res.*, 39:293-299 (Jan.), 1919.

MICHIGAN'S DEPARTMENT OF HEALTH

C. C. SLEMONS, M.D., Dr.P.H., Commissioner

LANSING

AMEBIC DYSENTERY

Twenty-six cases of amebic dysentery were reported to the Michigan Department of Health from August first of this year to November twenty-seventh. Although the history is not complete on all of these cases, it is evident that a great majority received their infection during a visit to Chicago. Special isolation and restriction instructions are being sent to physicians and health officers having cases in their jurisdiction.

Physicians are urged to be on the alert and report any cases or suspected cases immediately to their local health officer, who in turn should notify this department without delay. An acute intestinal attack with frequent stools containing much mucus and perhaps blood, together with a history of

having visited Chicago, should suffice for a tentative diagnosis as amebic dysentery until further clinical history and laboratory examinations can be obtained.

Stool specimens must be handled in a special manner for transportation to the laboratory. It is, therefore, wise for any physician having a case at some distance from a laboratory qualified to make such examinations to get in touch with the Michigan Department of Health.

While it is not anticipated that amebic dysentery will become a major problem in communicable disease control in Michigan, an outbreak such as has occurred brings vividly to our attention the fact that diseases which we have considered tropical and rare or non-existent in this state may at any

time become a real problem. It may well be that we have had more cases of this disease in the past than have come to our notice. It is usual to have a few, perhaps half a dozen or less, cases reported in the state each year.

Physicians are urged to read carefully the articles in the *Journal of the American Medical Association* for November 18, 1933, on the amebic dysentery epidemic. Report from Chicago lists 96 cities that are already involved, with the prospect of many more.

C. D. B.

ANNUAL PUBLIC HEALTH CONFERENCE

The Thirteenth Annual Public Health Conference held in Lansing on November 8, 9 and 10, 1933, sponsored jointly by the Michigan Public Health Association and the Michigan Department of Health, had a registered attendance of 279 health officers, public health nurses, practicing physicians, dentists, and interested laymen. This was a slightly larger number than registered last year, and the proportion of non-registered visitors was even higher.

The separate round tables for health officers and public health nurses that featured the opening session proved as popular as ever and brought out the largest first day attendance in recent years. Discussion of current local problems occupies the round tables, with no outside speakers and no guests.

A session that drew an interested audi-

ence was that at which Herbert E. Phillips, D.D.S., of Chicago, spoke on "Social Trends as They may Effect Changes in Delivering Medical and Dental Care." Another crowded session was the one given over to consideration of the effect upon nutrition and health of present economic conditions, and the resources available for state emergency welfare relief. A communicable disease symposium closed the Conference, presenting the typhoid carrier situation in Michigan, scarlet fever, products for diphtheria immunization, and encephalitis.

CHILD HYGIENE NOTES

A series of Women's Classes is being conducted in Wayne County by Dr. Ida Alexander. The classes started on October 31 and will continue for six weeks. During the week of November 13 the attendance reached the unusually high mark of 736.

Dr. G. B. Corneliuson is giving lectures on child hygiene and communicable disease control before the county normal training classes as a part of the Department's program of assistance in teacher training.

Child Care Classes are being conducted in Manistee, Clare, Midland and Luce Counties by staff nurses of the Bureau of Child Hygiene and Public Health Nursing.

Esther Nash, R.N., is assisting physicians in Manistee County in the giving of protective treatments against diphtheria. The following towns are included in the program: Wellston, Stromach, Filer City, Copemish, East Lake, Arcadia, and Bear Lake.

USE OF LIVER EXTRACT INTRAVENOUSLY IN TREATMENT OF PERNICIOUS ANEMIA

RAPHAEL ISAACS, CYRUS C. STURGIS, S. MILTON GOLDHAMER and FRANK H. BETHELL, Ann Arbor, Mich., gave 1,000 intravenous injections of liver extract to 140 patients with pernicious anemia. They observed that substances causing reactions when liver extract is given intravenously may be removed by treatment with permutite and acetone. Intravenous injections of the extract made from 100 to 125 Gm. of liver may be given weekly to patients with pernicious anemia until the red blood cell count is normal, then once every month as a maintenance dose. Proper checks should be used to determine the dosage required for each individual patient. A char-

acteristic "reticulocyte response" is induced by this type of therapy, but the average maximum percentage is higher than that reached after about forty times as much material as is usually taken by mouth in divided doses daily. The subjective changes and neurologic improvement are marked features with this type of therapy. The intravenous method presents a distinct economy in the use of liver material and allows the patient freedom from daily medication, and a nonlimited diet. It also assures the physician that the patient is taking a known dose of potent material at regular intervals. A favorable response is obtained by the intravenous use of liver extract in a small group of patients with pernicious anemia who do not respond to liver or desiccated hog stomach when given orally.—*Journal A. M. A.*

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Owing to the limitation of space, preference will be given brief articles.

Manuscripts should be typewritten, double spaced, on one side of white paper 8½x11 inches. There should be a margin of 1½ inches on the left side of page.

All photographs should be clearly focused prints on glossy paper (do not send negatives). The standard 8x10 or 5x7 size prints are recommended.

All line drawings (charts, diagrams and sketches) are to be drawn with India ink on stiff white paper or Bristol board. Drawings are to be made with pen lines of suitable thickness to allow reduction to the width of one or two columns, as the case may be, of the Journal. Do not send drawings in colored ink.

Illustrations will not be accepted unless they reach a certain standard of excellence technically and present an attractive appearance. Illustrations, both photographs and drawings, are to be separate from the text. These each should be labeled on the back with the Figure number, legend, title of paper and the author's name.

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Contributors are responsible for all statements, conclusions and methods in presenting their subjects. Their views may or may not be in agreement with those of the editor. The aim, however, is to allow authors as great latitude as the general policy of The Journal and the demands on its space may permit. The right to reduce in length or to reject any article is reserved. Articles are accepted for publication on condition that they are contributed solely to this Journal.

EDITORIAL...

JANUARY, 1934

1934

The opening of the New Year is a time not only for retrospect but for forecast. We do not use this word in the sense of prophesying for the simple reason that prophecy is the last thing we would indulge in under present conditions. It would be interesting to look upon the present social and economic situation in a detached way, as a spectator, for in this way only may we behold it in its true light. It is difficult, however, to be a mere spectator when one is in the midst of the game.

It is not in our stars but in ourselves that we are underlings, and man is the architect of his own fortune. We have been taught also that there is a destiny that shapes our ends. In the long perspective of history one cannot but feel that there is a great deal to be said for that school of historian which might properly be called determinist, with whom man is but a pawn on the great chess-board of life, moved backward and forward by an unseen player—destiny. The year 1933 has proved an Armageddon for many. What the year 1934 may have in store, it is impossible to forecast. One thing is certain, that we are in an era of rapid transition. The world has witnessed revolutions in government on a greater scale during the past two decades than has occurred in a thousand years. To one whose interests are inclined towards history, politics in the larger sense was never so important as today. Whatever one's political affiliations, however, it behooves him to be patient with the President of the United States in his efforts towards recovery. From the very nature of the conditions with which the nation is surrounded, all such attempts are to a greater or less extent a matter of experiment. Efforts for recovery, if they are to be effective at all, will be largely a matter of "trial and error." It would be an almost superhuman person (and none exists) who could chart a course that would not require to be changed or modified to meet conditions as they are bound to arise. The president and the government will be wise if they do not make commitments that may compromise or jeopardize the future.

For centuries feudalism was the order of

human society. Later came the ushering in of the industrial era with the invention of the steam engine, machines and so-called labor saving devices and with them capitalism and the profit system. The present generation has no acquaintance with nor any knowledge of any other form of society. Caution therefore is the order of the day, with perhaps the majority in this country, though in European countries, particularly Germany, Russia, Italy, the old and tried forms of government have been cast to the winds. Many of us, however, feel that it is better to bear the ills we have than to fly to others that we know not of.

The present is a time of emergency measures. Who can foretell when it will all end? Emergency relief in the way of public works, feeding and clothing and housing the unemployed; emergency relief for the indigent sick. The demands on the federal, state and local treasuries have been unprecedented. In the end, however, the taxpayer must meet the obligation. When he is no longer able to do so, what then? The nation is sick. An effort is being made to revive it by stimulants. There comes a time, however, when stimulants or sedatives become depleted or inert, when "all the drowsy syrups of the world" lose their effect.

Feudalism of centuries ago was not a matter of choice; neither was industrialism and capitalism, of more recent date. If we are to have a new order of society, paternalistic, socialistic or other, its ushering in will not be the result of the preaching or propaganda of any socialist or other movement already in existence but will be the result of conditions which the nations of the world are powerless to direct or control. In the meantime experience has taught us the value of old and tried methods which must be adhered to with tenacity. To the student of human affairs no other period in history is so interesting as the present. Much is being written—much of it nonsense—some of it wisdom; but out of free discussion should evolve a stable society. For—

"From discussion's lip may fall
With life, that, working strongly binds—
Set in all lights by many minds
To close the interests of all.

* * *

"Even now we hear with inward strife
A motion toiling in the gloom—
The spirit of the years to come
Yearning to mix itself with life."

AMEBIC DYSENTERY

The widespread incidence of amebic dysentery in the United States has become almost general knowledge. The proximity of Michigan to Chicago means that probably a larger percentage of the people visited the Century of Progress than those of any other state not contiguous on the State of Illinois. It is reported that cases are continuing to appear in various places throughout the United States, not only from the original focus of the disease but from secondary foci as well. It is apt to spread in families where a single member becomes ill of the disease. A characteristic that demands careful observation is the long incubation period which ranges from nine to ninety-five days.

This number of the JOURNAL contains comment by Dr. C. C. Slemmons, Commissioner of Health, who reports twenty-six cases of amebic dysentery from August 1 to November 27, 1933. Attention is called to the special article by W. L. Chandler, Resident Associate in Parasitology at Michigan State College prepared at the request of Dr. Barrett, Epidemiologist of the Michigan State Board of Health. This brief article is particularly valuable inasmuch as it deals with the neosarsphenamin treatment of intestinal protozoal diseases.

1934 MEMBERSHIP

The fiscal year of many, perhaps the majority, of county medical societies corresponds with the calendar year, which is a suggestion that membership dues should be paid as promptly as possible after the opening of the New Year. Probably at no other time in the history of county medical societies or state medical societies is the need of full membership so urgent as at present. The medical profession has its back against the wall, so to speak. The most serious as well as important question facing us as a profession is whether we are to manage our own profession or have it managed for us by non-medical tribunals. If the management of the social and economic problems affecting scientific medicine and medical practice are to remain in the hands of the profession, it can only be so where the profession is a unit and when it is willing to subordinate its unimportant differences and unite in the common cause of the group.

To quote a contemporary, the *Ohio State Medical Journal*: "To meet future chal-

enges and solve satisfactory new questions of concern to every physician, medical organizations must function systematically and effectively. It has done so in the past. No sales talk is necessary to emphasize the importance and usefulness of medical organization from the standpoint of the public and the medical profession. However, to carry on to strengthen its forces to meet increasing problems, medical organizations must have the enthusiastic and undivided interest and active support of every eligible physician." This will apply to Michigan with all the force that it applies to the profession of our neighboring state of Ohio.

We have said repeatedly that next to the active performance of one's duties should come membership in the county medical society.

POST-GRADUATE OPPORTUNITIES

"A little learning is a dangerous thing,
Drink deep or taste not of Pierian Spring."

How often have we heard this quotation as sort of conclusive evidence against limited knowledge of any subject. We would like to take issue with this sentiment in as much as a little knowledge is not a dangerous thing if that knowledge is correct so far as it goes and not misinformation. Furthermore a little knowledge is not a dangerous thing to the person who is capable of realizing his limitations. All this is prefatory to the movement which has become popular in Michigan the past few years of undertaking short intensive courses in many medical subjects. These short courses devoted to a single subject have been found of untold advantage to physicians and surgeons in the active practice of their profession. Last month we announced a five day post-graduate course in psychiatry and neurology which will begin January 22, 1934, under the auspices of the Department of Post-Graduate Medicine of the University of Michigan. This course will be given under the direction of Dr. A. M. Barrett, Director of the State Psychopathic Hospital and Professor of Psychiatry, Dr. Carl Camp, Professor of Neurology, Dr. Max Peet, Professor of Surgery, and Dr. Udo H. Wyle, Professor of Dermatology. They will be assisted by several nationally known psychiatrists from other medical centers. Among other things the course will include instruction in diagnosis and management of

minor psychoses. These courses will be suited to the needs of the general practitioner. As announced, the neurological section, which will occupy about one-third of the program, will present diagnostic and clinical demonstrations of particular value in general practice. Further particulars in regard to this course may be obtained on direct application to the Department of Post-Graduate Medicine at the University Hospital.

MEMBERSHIP AND MEDICAL PROTECTION

The editor feels that an explanation or apology might be due owing to the frequency this subject has appeared in the editorial department of this JOURNAL during the past several years, were it not a fact no other single subject has received more attention in state journals throughout the country. Attention is drawn to extracts from an editorial in the *Journal of the Indiana State Medical Society* on the subject (see page 34).

As we have said many times, malpractice suits would be few and far between were doctors to refrain from commenting on the results of other physicians' treatment, it may be of conditions that attending physicians were powerless to influence either favorably or unfavorably. No one practising medicine is immune to charges of malpractice. The least skilful may go a professional lifetime without any threat, while the most scholarly and skilful may be the victim of indictment. The possibility of being ruined financially by the patient he has, perhaps unsuccessfully, endeavored to help, haunts like a spectre the most altruistic and humane of professions.

The method of dealing with charges of malpractice as outlined in *Northwest Medicine*, namely, by an investigating committee made up of members chosen from the County Medical Society, has much in its favor. But here again, there are so many qualified physicians and surgeons who have either permitted their memberships to lapse, or have never thought it worthwhile to identify themselves with a local medical society. Full membership maintained in the County Medical Society would render the investigating committee plan extremely valuable by way of preventing what has come to be an annoying nuisance. The subject of malpractice was thoroughly discussed at the annual meeting of State Medical Associa-

tion and Editors which met in Chicago in September last where the consensus of opinion resolved itself into emphasis on the importance of medical society membership with the *esprit de corps* which is characteristic of live coöperation.

The cost of medical defense insurance has a tendency to rise with the increasing frequency of threats and suits. Whether is it better to maintain one's membership in a county medical society, or to pay a private insurance company double sized premium for protection?

INSURANCE MEDICINE

Elsewhere in this number of the JOURNAL appears a paper, "The Practice of Medicine in Germany" by Dr. Arthur H. Mollmann, of Grand Rapids. Dr. Mollmann has practised medicine in Germany for a number of years. For the past eleven years he has practiced in this state. He has made several visits to Germany since locating here. One of our members who practices in Grand Rapids writes that Dr. Mollmann has an interested audience of doctors when he returns from abroad with his interesting experiences and observations. The readers of this JOURNAL are given the opportunity of perusing a paper that was read before a group of Grand Rapids physicians. Dr. Mollmann's account of insurance practice of medicine as it obtains in Germany is very illuminating. Human nature varies but little and there is little doubt that such conditions might readily be duplicated in this country were this species of socialized medicine ever adopted.

HEALTH EXAMINATIONS UNDER CWA*

JOHN W. SMITH, Mayor of Detroit

I wish to congratulate you members of the Wayne County Medical Society on holding this Medical Economics meeting. From the presentations and discussions, I see that your whole interest in the subjects on tonight's program is this: the welfare of the patient. This may be surprising to many citizens of this and other municipalities; to me, it is not surprising, because for years I have been watching the medical profession of this town, and I know and realize the true altruism of your physicians. I have marvelled at the inestimable amount of free service which you have rendered the poor and unfortunate, and many times I have gone out of my way to correct the impression—which unfortunately seems to be general—that the Doctor of Medicine is paid for all the fine work he is doing in clinics, in

hospitals, and in his private office. I know he is NOT being paid, though I feel he should be reimbursed for this wonderful service to humanity, especially the service to those who are charges of the city, county, and state which are responsible for their well-being. This burden has been carried by the medical profession of the country for years, but it has become so heavy in the last four years that it is absolutely beyond the means of the profession longer to carry it alone. May I suggest, gentlemen, that you cast aside your professional modesty sufficiently to tell the world just how much good work you are doing, how much free service you are daily rendering, and further that you request and demand help in your labors from those elected and appointed to bring relief to the distressed. All others supplying necessities to these people are paid and gain a margin of profit; it is not right nor just that the medical profession should be left out in the cold, merely because they have generous hearts and come closer to the patients.

A few days ago, I was in Washington and enjoyed a wonderful chat with the President. I also met Harry Hopkins, administrator of the CWA. He asked me to suggest various projects to get men back to work, to get money in circulation, to aid the President's recovery program. Here's one of the suggestions I gave to him, on which he seemed to look with favor:

For the benefit of the people, both physically and mentally, give each and every person who is unemployed, but who is not on the welfare, a thorough health examination, and pay the doctor for his work. There are millions who are unemployed who at the present time are not receiving adequate medical attention. They are worried over their physical condition and some are getting to be "neurotics" and all those other fancy names you gentlemen use which mean that these people are thinking so much about themselves and their ailments that they are really making themselves ill. Psychologically, this is very bad. It will become worse if immediate action is not taken. Why not encourage these unfortunate people; give them a new lease on life; cheer them up. How? Prior to their employment (and they will be back on the job some day—sooner than you imagine), send them to their physician for a thorough health audit. Many of their imaginary ailments will disappear, other incipient diseases will be uncovered so that timely and necessary medical attention can be administered to save their lives, other medical treatment of non-acute conditions will be indicated for which attention can be procured as soon as the individual returns to work, and finally, the physical examination which may be a condition precedent to employment will have been done so that when the job opens up, the man is all set to step into the position without delay.

Employees working on CWA projects, if injured in the performance of their duties, are entitled to medical, surgical and hospital care, and to compensation benefits similar to those provided by the United States Employees' Compensation Act of 1916.

Another feature which might be suggested to Administrator Hopkins is that a health examination of all employees at this time (some 52,000 in Detroit alone) will protect the government against malingerers of the future. That will be a saving to the taxpayers that you physicians can make. The doctor should be paid for this service which will save millions of dollars for the government.

Again, members of the Wayne County Medical Society, I congratulate you for your great work in my town. No other group is so unselfish, no other profession or trade thinks so much of the other fellow's good and so little of his own. John Citizen has much to be grateful for, to you Doctors of

*Address made by the Mayor of Detroit before the Wayne County Medical Society on Wednesday, December 20, 1933, in the Detroit Institute of Arts.

Medicine, and I feel he should be told about it in headlines.

THE AFFLICTED CHILD LAW

(*Bulletin of the Oakland County Medical Society*)

"We invite every member's attention to an editorial in the December issue of the JOURNAL OF THE MICHIGAN STATE MEDICAL SOCIETY. The substance of this editorial is extremely pertinent at this time. We include elsewhere in this bulletin a list of the state laws pertaining to indigent medical care. We quote as follows: 'We have insisted time and time again that the care of the indigent sick should be a community duty and not the duty of any segregated group. Some municipalities seem to have funds for public works and various so-called civic improvements, but not a cent to recompense the medical profession for services that the traditional ethics of the profession impels its members to perform.

"The doctor is a citizen who at great expense and effort has qualified himself to render service to the sick and afflicted. He must himself live and give his family advantages in the way of education commensurate with his station in life, which he cannot do with the numerous inroads that have been made into his field of practice. He is the last person to ask for special favors of any description. He asks only equity and justice.'"

THE MALPRACTICE BUGABOO

(*Indiana State Medical Journal*)

The rapidly increasing list of malpractice suits against physicians demands more than passing notice; it calls for drastic action, lest it become dragon-like and prove a veritable scourge. We have had several comments on the situation lately, but seemingly these have been to no purpose, for the evil continues to flourish at an amazing pace.

* * *

Northwest Medicine, for October, 1933, directs the attention of its readers to a few salient facts regarding malpractice suits. After considering the matter of increase in their number, the editor goes on to give what we believe to be some very wholesome advice as to the method used in combating them. He suggests a special investigating committee, appointed from the local society, whose duty it shall be to make a thorough investigation of the affair; he clearly points out that it should not be left to the secretary of the local society. This committee first consults with the physician threatened with a suit. The merits of the case are carefully gone into. Then the attorney about to bring the suit is consulted and the position of the committee made very clear. If a fellow physician is to appear as a witness for the plaintiff, the committee seeks him out and has a cold turkey talk with him. All this would seem to be designed to try the case ere it gets to court, which sounds as thought it might be good doctrine.

Whatever merit there may be to the plan, we have long been of the opinion that not enough activity is displayed by the county society in these cases; our observation has been that a lot of sympathy is expressed for the defendant and that just about concludes the manifest interest usually displayed. * * *

We again urge that something definite, something radical, if you please, must be done about this thing; we cannot longer sit idly by and permit this evil to grow, unhampered; the remedy lies solely within the hands of organized medicine; it is to our leaders that we must look for a solution of the problem and a direct application of that solution.

HISTORICAL

THE DEVELOPMENT OF BIOLOGICAL STAINING*

Stains have been a most important adjunct to biological sciences during the past eighty years. In fact, the whole modern development of animal and plant histology, the study of cell structures, and the investigation of cell division and chromosome behavior have depended upon the use of stains. Bacteriology, morbid histology and hematology are three medical sciences which could not have reached their present status without stains. The increased use of the compound microscope during the first half of the nineteenth century led naturally to the adoption of a technic already of commercial importance in the textile industry. Of the three types of biological stains, natural dyes, synthetic dyes and metallic stains, the first two were adopted directly from industrial usage.

The natural dyes, many of which had an ancient origin, were derived principally from plant products. Among these were: indigo, litmus, alizarin, cabbage juice, blueberry juice, saffron and madder. These dyes were the chief coloring materials in Europe up to the fifteenth century, when fustic, logwood and cochineal were introduced from South America and Mexico. Since some of these dyes were easily washed from fabrics, it was necessary to set them with alum or other salts. This process, known as "mordanting," is almost as old as dyeing itself.

The first known application of dyes to microscopy was the use of carmin (cochineal) in an investigation of wood structure by the English botanist, Sir John Hill (1770). Considerable time elapsed before the possibilities of Hill's technic were appreciated. Even then, carmin and madder were used with only indifferent success by Ehrenberg (1838), Goepfert and Cohn (1849) and Corti (1851). Later, by the addition of ammonia, Hartig (1854) ob-

*This is the third of a series of historical editorials on the evolution of methods and devices that have aided in the progressive development of Medical Science. That in the December number of the JOURNAL of the Michigan State Medical Society discussed the evolution of the microscope. It is readily seen that without the discovery of staining processes the microscope would be very much limited in its use.

tained a more satisfactory carmin stain. The first really successful scientific use of carmin, however, has been attributed to Gerlach (1858), who accidentally discovered that dilute solutions of dyes were more efficient than stronger solutions. In the staining of tissues, carmin, or any other successful microscopical dye, does not stain all structures uniformly in the manner of a textile dye. Rather, cell membranes, nuclei or inclusions are differentiated as specific structures. The importance of Gerlach's discovery, therefore, lies in the fact that a dilute solution of carmin produces this differentiation. Boettcher (1869) discovered a further improvement in the method of differentiation whereby excess stain could be washed out of the cells by means of an alcoholic solution. Development of carmin during the next decade was effected by the addition of alum or borax as mordants. Thus, in a few years, carmin became an important stain of wide application as its use in the cytological studies of such men as Flemming, Hertwig and Boveri might suggest.

Another natural dye, hematoxylin, which is derived from logwood, was used as a biological stain by Waldeyer (1863), but with relatively poor results. Within a decade, however, this stain became invaluable through the work of Boehmer, Benda and M. Heidenhain, who used chromic acid and the salts of copper or iron as mordants. In a short time, hematoxylin and carmin had entirely supplanted the other natural dyes, and they have not yet been eliminated by the extensive use of synthetic dyes.

These synthetic dyes are derived from the five hydrocarbons: benzene, toluene, xylene, naphthalene and anthracene, which are obtained commercially from coal tar. The first anilin or coal tar dye appeared when William Perkin (1854-6) discovered a purple dye while attempting to synthesize quinine. This dye, which he called "mauve," was the first of hundreds of dyes synthesized by chemists. Anilin dyes were employed as microscopic agents as early as 1862 (Beneke), and almost each year following new dyes were used. Some of the more important with the date of their first usage are: picric acid (1863, Roberts), fuchsin (1863, Waldeyer), eosin (1875, Fisher), safranin (1876, Ehrlich), methylene blue (1881, Ehrlich), orange G (1884, Ehrlich) and neutral red (1894, Ehrlich).

Shortly after the introduction of anilin dyes, Schwartz (1867) and Ranvier (1868) introduced the principle of double staining by combining carmin and picric acid. Each of these stains tended to differentiate intercellular structures by coloring them either red or yellow. The synthetic dyes came to be used in combination or with hematoxylin and carmin. At the close of the nineteenth century, three stains were sometimes combined, as in those of Flemming and Mallory.

Subsequently, an important use of the anilin dyes arose as a result of the discovery of bacteria, since carmin and hematoxylin proved to be of little use in staining these organisms. Weigert (1867), Koch (1877) and Ehrlich (1881) introduced technics suitable for bacteriological staining. With some modification, a formula of Ehrlich's persists at present as the familiar Gram stain. For studies of the blood, Romanovsky (1891) devised a combination of methylene blue and eosin which was widely used, and the now popular Wright and Giemsa stains are but variations of the earlier technic. A relatively modern development is the use of non-toxic dyes in staining living tissues for microscopic observation.

In 1879, Ehrlich published a paper recognizing the chemical and histological distinction between basic and acid dyes. These dyes tended to stain different parts of cells, and the terms "basophilic" and "acidophilic" were used to indicate structures stained by one type of dye or the other. It was later considered that staining indicated a chemical union between a basic dye and an acid cell or the reverse. At present, objections are raised to the chemical theory of staining, since staining activities do not seem to follow the law of mass action nor do they follow a normal thermal acceleration of rate. Furthermore, the staining properties of cells colored by two stains may vary, depending upon the sequence of their application. Electrolytic, adsorption and precipitation phenomena have been used to explain certain features of staining, but neither the chemical nor the physical theory will adequately account for the process of staining.

The foregoing developments of staining are essentially products of German microscopical research, while the third type of stain, namely the metallic precipitation

stain, is of distributed European development. By impregnation, a coloring matter is deposited in a tissue as a precipitate with the result that the elements become opaque. Dilute silver nitrate, after absorption by a tissue, is reduced to metallic silver on exposure to light. Flinzer (1854) and Ranvier (1868) developed the technic, and modifications designed to differentiate structures better were suggested over a period of years by Golgi, Cajal and others. These modifications involved the preparation of the tissues for the silver salts, the precipitation of silver by photographic chemicals and the toning with gold and other metals to produce sharper differentiations.

It has long been an aspiration of the microscopist to use stains as indications of the chemical characteristics of structures, but this has met with many difficulties. The increasing knowledge of the chemistry of dyes and the recent standardization of dye purity and performance may be the first steps in the realization of such an ideal.

W. T. D.

OBITUARY

DR. JAMES ERNEST BROWNE

Dr. James E. Browne, one of Howell's oldest practitioners, died of cerebral hemorrhage on November 16, 1933. He came to his end very suddenly while enjoying a hunting trip near Barton City, Alcona County.

Doctor Browne was born in Oak Grove in 1867 and was the son of Dr. and Mrs. Emery Browne. His father, a practitioner in medicine, eventually moved to Fowlerville, where the deceased received his public education. He later attended the Michigan State College of Agriculture at East Lansing, and subsequently matriculated in Medicine at the University of Michigan, graduating in 1896. He engaged in practice at Howell and had a long successful career in this community. He has been surgeon for the Ann Arbor and Pere Marquette Railroads, and during the War he was most active in the medical examination of soldiers. For his faithful service he received an honorary membership in the Civil Legion. Doctor Browne was a member of his County and State Medical Societies and a Fellow of the American Medical Association. He was active in Masonry and Rotary.

He married Mary Ann Browning in 1897 and to this union were born three children, one of whom, a son, died in infancy. He is survived by his widow; a son, Browning Browne, of Howell; a daughter, Ernestine, a teacher at St. Clair Shores; and two brothers, Dr. Temple Browne, of Portland, Michigan, and William Browne of Greenville, Michigan.

CORRESPONDENCE

WE ARE OBLIGED

Muskegon, Michigan
December 9, 1933

F. C. Warnshuis, Secretary
Grand Rapids

Dear Doctor:

Your December issue of THE JOURNAL is one of the most practical and interesting volumes I have ever received. Am preserving it in full, something rather unusual. For the past several months it has seemed to me this publication, always interesting and helpful, has been unusually fine.

Very truly,
LUNETTE I. POWERS.

To The Editor:

I have just been looking through the December number of the JOURNAL of the Michigan State Medical Society. May I offer my compliments on the contents of the same. Besides the well balanced scientific articles, I enjoyed very much that entitled "The Microscope." I trust this will be followed by other articles of a like nature. The editorial page seemed to be unusually good.

W. J. STAPLETON, JR.
Detroit, December 4, 1933.

To the Editor:

I am sure that many other readers of the JOURNAL besides myself welcomed the promise made in the footnote to "Hemostasis" and look forward to the historical sketches of devices and methods which are to follow.

From various sources, there has been cast on the doctor's desk often gratuitously what almost amounts to a plethora of biographies of the Personages in Medicine. Excellent as these vertical columns of the table may be, it will be profitable to scan the horizontal rows of events and to trace the biographies of ideas and principles. I believe the latter have the greater significance.

Sincerely,
WYNAND PYLE.
Detroit, December 11, 1933.

DARN 'EM BOTH!

I put my money in a sock,
The sock it had a hole;
I wish now I had used a bank,
For I have lost my roll.

I put my money in the bank,
I wish I'd used my sock;
For fate stepped in with playful prank
And put that bank in hock.

—Birmingham Age-Herald.

SOCIETY ACTIVITY

MID-WINTER MEETING OF THE COUNCIL

The Council will convene on January 15, 1934, at 1:00 P. M., in the Statler Hotel in Detroit for its regular mid-winter session and for the transaction of such business as may properly come before the Council.

B. R. CORBUS, *Chairman*.

F. C. WARNSHUIS, *Secretary*.

On the evening of January 15, the Council will attend the regular meeting of the Wayne County Medical Society. There will be addresses by the President, President-Elect, Chairman of the Council and the Secretary. These will be followed by a general discussion of organizational activity.

PREVENTIVE MEDICINE COMMITTEE REPORT

On Wednesday, November 15, 1933, more than 200 physicians gathered at the Herman Kiefer Hospital in Detroit to discuss the expansion of the program of preventive medicine at the hands of the family physician. At this meeting, which was held under the auspices of the Committee on Preventive Medicine of the Michigan State Medical Society, the program as applied in Allegan, Berry and Eaton Counties under the sponsorship of the W. K. Kellogg Foundation and as carried on under urban conditions by the Wayne County Medical Society in coöperation with the Detroit Department of Health, was fully outlined.

It is generally agreed that there are certain preventive medical services which in the past have been provided by health organizations, both official and non-official, which should be gradually transferred to the physician in his own office. Included among such services are diphtheria immunization, smallpox vaccination, periodic health examinations, and tuberculosis case finding. The Committee feels that in this transference of service to the family physician it is essential that there shall be in each locality, preferably each county or district, a full-time local health organization with a properly trained health officer and a sufficient personnel with which to carry on a program of health edu-

cation. In other words, there is nothing in this plan of medical participation which detracts from the necessity of having a properly organized local health department. On the contrary the health department is the first essential of the program.

It is common to most communities to find a certain degree of suspicion and antagonism which has developed between the county medical society and the health department. The former frowns upon the real or mythical inroad of socialized and state medicine and yet fails to provide a suitable substitute. Plans and suggestions may be proposed but rarely are these executed. The medical society has neither the funds nor the personnel needed to carry on a community health service. On the other hand the health department has too frequently overlooked the viewpoint of the practicing physician, has allowed his organization to develop so as to interfere with the private prerogatives of the physician and in some instances has enticed into free clinics individuals who can well afford to pay the family physician for his service. There is need of a more common understanding between the organized medical profession and the local health agency, both of which have a common purpose, the preservation and conservation of human life.

It has been amply demonstrated that under either urban or rural conditions a program of medical participation and health education can be put into operation with distinct advantage to the public, the health department and the medical profession. Once the medical profession has been prepared for the program, which should be sponsored by the county medical society, it is relatively easy to secure public interest and support through the normal channels of health education. It is the intent of your committee to bring to the attention of all county medical societies in Michigan a series of statements with respect to the functioning of such a program. The next statement will deal with the problem of preparing the coöperating physician.

A meeting of the Committee on Preventive Medicine was held on November 15, 1933, at the Herman Kiefer Hospital following an all day demonstration of medical participation in Public Health. Dr. F. B.

Miner presided in the absence of the chairman.

It was moved and carried—

(1) That the Chairman of the Committee on Preventive Medicine, together with the members, obtain suitable literature and develop a tentative plan for beginning medical participation, this information to be furnished to the Secretary of the Michigan State Medical Society, who will distribute same to each county committee on preventive medicine for the purpose of promoting local interest. Further, that the State Committee will be pleased to assist local medical societies in every practical way.

(2) To have speakers go into the various counties to talk upon the plan, and this should include one or two of the field men from the three counties who have actually been recipients of the plan, as well as members of the committee.

There was considerable discussion on the medical care of the indigent. Dr. Luce felt that this Committee should not attempt that work and it was the sense of the entire group that we confine ourselves to the plan of preventive medicine.

It was decided to have another committee meeting before the January meetings of the Boards of Supervisors.

L. O. GEIB, *Chairman.*

WELFARE RELIEF

The regulations governing medical care for those on welfare relief rolls reflects a compromise. No one contends that the provisions are equitable or that the remuneration is adequate. There were circumstances that induced the compromise.

Our state is not matching federal funds because of lack of state funds. The needs of the state are being provided for by additional federal funds. By reason of these conditions expenditures had to be confined to lower levels. This is the sole reason for the schedule adopted, which provides for larger fees than those first announced. This increase was secured through the representations of your officers.

In an emergency the profession is again making a contribution to public welfare. However, there have been secured additional benefits that will produce future dividends. Certain principles have been recognized: (a) patient-physician relationship, (b) recognition of the county medical societies, (c)

that medical services are best supervised and directed by the profession's representatives and not by social or government lay agents, and (d) that the medical care of indigents is a community responsibility and not the profession's sole responsibility.

The acceptance of these principles will be of extreme value when this emergency passes and communities again accept the responsibility for providing care for their indigents.

Hence the advice is given: Accept these provisions during the emergency; render the highest type of service; demonstrate a willingness to aid in the emergency. By so doing, when readjustments are made you will be in a position to formulate new regulations and demand their acceptance.

A word of caution is pertinent: Quality of service was questioned by government representatives. Your officers assured the Commission that service adequate in quality would be rendered. The profession must make good. Further, attempts to make unnecessary calls or to advise unnecessary treatments should be resisted. Put aside all temptation to "pad" your service. Honest service will be given but there may be an isolated individual who will be tempted. This cannot be condoned.

Recall, also, that these families will in many instances regain their independence. They have been turned from clinics to a family physician. The service you render now will determine whether you will be their future family physician. The opportunity is yours to build a future independent practice.

Chicago, Illinois
December 7, 1933.

To the Secretaries of the Constituent State Medical Associations:

Dr. W. C. Woodward, Director of the Bureau of Legal Medicine and Legislation of the American Medical Association, has sent me from Washington a statement concerning the results of conferences held with the Federal Relief Administrator. I shall attempt in this communication to submit to the secretaries of the constituent state medical associations what seems to be the official attitude of the Federal Relief Administrator as it is understood by Dr. Woodward:

In a prolonged conference with Mr. C. M. Bookman, Assistant Administrator of the Federal Relief Administration, Doctor Woodward discussed with him each and every one of the problems stated in letters and telegrams received from secretaries and other officers of state medical associations in reply to a telegram which I addressed to all state secretaries on November 16. All of these problems, Mr. Bookman concluded, were local problems and should be adjusted by the state medical associations and the corresponding state relief administrations.

The several state relief administrations are directed by groups of responsible men and women appointed by the governors of the several states with the approval of the Federal Relief Administration. The Federal Relief Administration has laid down certain principles for their guidance in Rules and Regulations Number 7. These principles were laid down along broad lines so as to leave the several relief administrations throughout the country a wide discretion in organizing state relief in the manner best suited to local

conditions. The Federal Emergency Relief Administration is loath, therefore, to undertake, through federal agents, to determine the needs of the several states and to direct state relief administrations to adopt measures not approved by the best judgment of the state agency.

That state relief can be organized to the satisfaction of the medical profession in accordance with principles laid down in Rules and Regulations Number 7 is apparent from the fact that it has been done in some states. Where a satisfactory organization has not been effected, the state medical association should get together with the state relief administrators to determine why and to remove obstacles to a successful organization. It is not necessary for any state medical association to wait for a state relief administration to take the initiative. If the state organization is such as to leave sick and injured persons and women in confinement without adequate medical service, concrete evidence of that fact should be submitted to the state relief administration with suggestions for correction. The suggestions should take into consideration, however, not only federal resources but also state resources susceptible of being made available or already available. Only in event of the inability or unwillingness of a state administration to utilize available resources for medical relief with resultant unnecessary suffering will it be worth while to take the matter up with the Federal Relief Administration. Even then, if it is taken up with the federal administration, it must be remembered that the state relief administration is made up of men and women of standing in their community, selected by the Governor with the approval of the federal authorities, and every presumption will be in favor of the regularity and efficiency of their action.

Men and women taken off relief rolls and placed on payrolls of the Civil Works Administration will not be entitled to medical relief at public expense. Physicians who attend such employees and their families must look to the head of the family for payment. If, however, such an employee is so situated that the wages he receives are inadequate to pay for medical service for himself and dependents, he may submit his case to the state or local relief administration. If the relief administration determines that the situation of the applicant is such as to warrant the furnishing of medical service at public expense, it will make some arrangement to furnish it. Just how this will be done, whether by placing the applicant on the relief rolls or in some other way, is a matter to be worked out locally. The situation is one that is likely to call for a large amount of free service from the medical profession, for it is unlikely that many persons suddenly taken from relief rolls and placed on the civil works rolls will be able to pay for medical service. This will be true particularly in the case of those transferred workers who are heads of families. If a person is able to provide himself and his family with food, clothing, fuel and shelter but is unable to provide medical service, he may be placed on the relief roll and needed medical service provided at government expense.

It would seem, from the attitude of the Federal Relief Administration as above set out, that in the matter of providing medical service for persons who have been taken off relief rolls and placed on payrolls of the Civil Works Administration the medical profession will simply have to make the best out of the situation that it can. It is to be doubted that the profession can ask that the pay of all workers on the civil works rolls be increased so as to enable them to pay for medical service or that the pay of some of them who need medical service be increased above the pay of others not so situated while both are engaged on the same class of work.

It is important to note that an applicant for relief at government expense must be placed on the relief roll by the Emergency Relief Administration, even though the only relief he seeks is medical relief, and that an order from the relief administration is necessary if the attending physician expects the government to pay for his services.

I am inclined to the opinion that an increasing number of physicians in various parts of the country entertain grave doubt as to the desirability of accepting direct payment for medical services from the government. I gather from statements which have come to me from a comparatively large number of physicians that some feel that the acceptance of compensation from the government in nominal amounts may constitute a precedent whereby it will be made exceedingly difficult to maintain fee schedules heretofore adhered to, if and when there has been distinct improvement in the general economic situation. Many others appear to entertain the fear that the acceptance of compensation at the hands of the government may encourage the development of some system of governmental control of medical practice. However this may be, it is undoubtedly a fact that many physicians in various parts of the country have about come to the end of their own resources, and that it will be difficult for them to carry on unless they can receive some compensation from some source.

We shall be greatly obliged if you will keep us advised as to any further developments in your state with respect to emergency medical relief.

Very sincerely yours,

OLIN WEST, Secretary,
American Medical Association.

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ARBOR, MICHIGAN

January 22-27, 1934

This course for qualified graduates in Medicine stresses the fundamental factors of the minor psychoses and their importance in the treatment of functional and organic disease from the psychiatric and neurologic standpoint.

The increase of neuroses in the general population in recent years has made the scientific advances in methods of diagnosis and treatment of particular concern to the physician, and a comprehensive understanding in the broad field between sanity and the major psychoses is of particular advantage in evaluating symptoms which usually have received only irregular attention.

We have been fortunate in being able to arrange that this course be complimentary to members of the profession of Michigan. Enrollment is limited and registration will be in order of application.

PROGRAM

Monday, January 22, 1934

A.M.

- 9:00 Registration. Room 2040.
10:00 Neurology. Methods of History Taking.
The Physical Examination.

Dr. Carl D. Camp

- 11:00 The Interpretation of Neurological Findings with
Illustrative Cases.

Dr. Carl D. Camp

P.M.

- 1:30 Psychiatry. Heredity and Constitutional Factors in
Mental Disorders.
3:15 The History and the Examination of the Psychiatric
Patient.

Dr. Albert M. Barrett

Dr. Albert M. Barrett

Tuesday, January 23, 1934

A.M.

- 9:00 Neurology. Indication for Spinal Puncture.
Technic. The Spinal Cell Count.

Dr. L. E. Himler

- 10:00 Intraspinal Therapy. Spinal Block. Interpretation of
Findings.

Dr. L. E. Himler

- 11:00 Demonstration of Neurological Cases.

Dr. Carl D. Camp.

P.M.

- 1:30 Psychiatry. Psychoneuroses. Anxiety States. Com-
pulsions. Phobias. The Hysterical Reaction.
3:00 Mental Deficiency: Training of the Defective Child.

Dr. Albert M. Barrett

Dr. Robert H. Haskell

Wednesday, January 24, 1934

A.M.

9:00 Psychopathic Personalities.

Dr. John M. Dorsey
Emotional and Neurotic Factors in Somatic Disorder.
Dr. Franz Alexander
Chicago

P.M.

2:00 Unconscious Mechanisms in Somatic Illness.

Dr. Franz Alexander
3:00 Psychoanalysis and General Medicine.
Dr. Franz Alexander*Thursday, January 25, 1934*

A.M.

9:00 Neurology. The Diagnosis of Intracranial Lesions.
Physiological Considerations, Symptoms and Physical Signs.

Dr. R. W. Waggoner

10:00 Diagnosis of Intracranial Lesions. X-ray Studies.
Value of the Encephalogram. Illustrative Cases.
Pathology.

Dr. R. W. Waggoner

11:00 Demonstration of Common Neurological Conditions.
Dr. Carl D. Camp

P.M.

1:30 Psychiatry. The Schizophrenic (Dementia Præcox)
Reaction.

Dr. Albert M. Barrett

3:00 The Cyclothymic (Manic Depressive) Reaction.
Dr. Albert M. Barrett*Friday, January 26, 1934*

A.M.

9:00 Therapeutics in Mental Disorders.

Dr. Robert R. Dieterle

10:00 Behavior Problems of Children.
Dr. David Levy
New York City

P.M.

1:30 Behavior Problems of Children.

Dr. David Levy

3:15 Psychiatric Reactions in Organic Brain Diseases;
General Paresis: Toxic Psychoses: Puerperal Mental Disorders.

Dr. Albert M. Barrett

7:30 Demonstration of the Pathological Anatomy Associated with Psychiatric Disorders.
Dr. Konstantine Lowenberg*Saturday, January 27, 1934*

A.M.

9:00 Treatment of Neurosyphilis.

Dr. Udo J. Wile

10:00 What Neurosurgery Offers in the Relief of Intractable Pain. Demonstration of Cases.
Dr. Max M. Peet

COUNTY SOCIETIES

ALPENA COUNTY

Dr. W. B. Newton was elected president of the Alpena County Medical Society at the annual meeting Thursday evening, December 7.

Dr. Newton succeeds Dr. Leo F. Secrist, moving to the office from the position of secretary-treasurer.

Other officers elected were Dr. William E. Nesbitt, vice president; Dr. Harold Kessler, secretary-treasurer; Dr. F. J. O'Donnell, delegate to the state convention of the society, and Dr. A. R. Miller of Harrisville, alternate.

One of the best addresses ever made before the society was that by Dr. Oliver W. Lohr, director of the national pathological laboratory in Saginaw. Dr. Lohr, discussing appendicitis and tumors, used natural color slides to illustrate his talk and the society was unanimous in praise of the address. Dr. Lohr, who has the largest collection of tumor and pathologic specimens in the country, proved to be highly entertaining and informational.

Out-of-town guests included Dr. Lloyd Campbell of Saginaw, son of Mr. and Mrs. W. H. Campbell of this city; Dr. A. J. Schmalzer, Hillman; Dr. C. A.

Carpenter, Onaway; Dr. A. C. McKinnon, Atlanta; Dr. A. R. Miller of Harrisville, and Dr. Lohr.

The retiring president, Dr. Leo F. Secrist, had charge of the program. A venison dinner preceded the business meeting.

DICKINSON-IRON COUNTY

Dickinson-Iron County Medical Society held its annual society meeting on December 7 at the Millman Hotel, Iron Mountain. Eighty per cent of all the members were present, which was the best attendance we ever had. The following officers were elected: Dr. W. J. Kofmehl, Stambaugh, president; Dr. A. L. Haight, Crystal Falls, vice president; Dr. C. P. Drury, Iron Mountain, secretary-treasurer. Last year's Public Relations Committee and the Program Committee were continued in office. Dr. Boyce, retiring president, named a new committee, called the Medical Economics Committee, to watch closely the local Emergency Relief situation and to represent the society in any dealings with the local Emergency Relief Agencies.

Dr. Boyce as president read a paper in which he gave us a résumé of the trend of the practice of medicine during the past year, especially in its economic aspect.

Dr. H. H. Haight, after collaborating with several other members, offered the following motion which was passed unanimously: Moved that the Dickinson-Iron County Medical Society, as individuals and as a unit, agree to coöperate with the Emergency Relief Commission; but no agreements as to fees or codes shall be entered into except as shall be in agreement with those approved by the Michigan State Medical Society. Furthermore, those families or individuals working under CWA shall be expected to pay for medical services at the recognized fee schedule.

CHARLES P. DRURY, *Secretary*.

GOGEBIC COUNTY

The annual meeting and banquet of the Gogebic County Medical Society was held at the Curry Hotel, Ironwood, on December 5, 1933, at 8:30 P. M. The committee in charge was P. R. Lieberthal, W. L. Maccani and C. C. Urquhart. The usual reports of committees were given and election of officers was held.

Dr. F. G. H. Maloney of Ironwood was elected president; Dr. C. E. Anderson, vice president; Dr. Frank L. S. Reynolds, secretary and treasurer, and Dr. W. E. Tew, Bessemer, state delegate. The meeting was well attended, with twenty-four members present.

The new president, Dr. Maloney, discussed the work for the year with special reference to the entertaining of the Upper Peninsula Medical Society in 1934. Mr. Wm. Carlson, speaker of the evening, from the University of Michigan, discussed his experiences in Greenland. The meeting adjourned at 11:00 P. M.

FRANK L. S. REYNOLDS, *Secretary*.

GRAND TRAVERSE-LEELANAU COUNTY

At a special meeting of the Grand Traverse-Leelanau County Medical Society held at the J. D. Munson Hospital on November 14, 1933, the following action was taken:

By unanimous vote, it was decided that the secretary communicate with the directors of both Grand Traverse and Leelanau County Welfare Relief Commissions, and inform them that our membership will refuse to render medical service to wel-

fare indigent sick for fees such as are proposed in the letter of November 8, 1933, from the Michigan State Emergency Welfare Relief Commission.

Further that a copy of this action be sent to our state secretary, secretary of the American Medical Association, and also to the secretaries of our surrounding county medical societies.

Complaints have been received from Dr. J. W. Gauntlett of Traverse City, concerning interference with the medical profession by field nurses of the Couzens Fund operating in and about Lake City. He states that he has had similar trouble with the Couzens Fund nurse in Benzie County. This complaint is submitted with the sanction of our local membership.

E. F. SLADEK, M.D., *Secretary*.

GRATIOT-ISABELLA-CLARE COUNTY

The December dinner meeting of the Gratiot-Isabella-Clare County Medical Society was held in the Wright Hotel, Alma, Thursday, December 7. Twenty-two members and two visitors had dinner together. Three members came in after dinner.

President Carney called the meeting to order. The minutes of the previous meeting were read and approved. The application of Dr. Rex A. Wilcox, having previously been referred to the Board of Censors and recommended by them for membership, was read. Motion was made and supported that Doctor Wilcox be admitted to membership to this society; motion carried.

The Secretary's annual report was read, which showed we have held ten regular and three special meetings during 1933. Eight of these were addressed by doctors from outside the society and two programs were given by our own members. We now have thirty-two members. The expenses of the society for the past year were as follows:

Flowers (Doctor Smith).....	\$10.00	
Expenses of invited guests.....	23.39	
Postage	6.50	
Telephone and Telegrams.....	4.11	
Stenographer	10.00	
Secretary	25.00	
TOTAL	\$79.00	\$79.00
Balance on hand January 1, 1933.....	\$16.44	
Surplus from Supervisors' meeting.....	2.95	
32 members (\$1.25 each).....	40.00	
Total cash received.....	\$59.39	59.39
Showing a deficit of.....	\$19.61	
Special collection to make up above deficit.....	23.00	
Balance on hand.....	\$ 3.39	

Motion was made and carried that the report be accepted. A suggestion was made that the Secretary collect \$1.00 from each member to make up the deficit, which was done. Motion was made and carried that the County Society dues for 1934 be \$2.00 per member.

The report of the nominating committee was as follows: President, A. D. Hobbs, St. Louis; vice president, L. F. Hyslop, Mt. Pleasant; secretary, E. M. Highfield, Alma; delegate, T. J. Carney, Alma; alternate, W. L. Harrigan, Mt. Pleasant.

Motion was made and carried that the report of the nominating committee be accepted and the above be declared elected as officers for 1934.

President Carney then introduced Dr. J. P. Pratt from the Henry Ford Hospital, who discussed bleeding in relation to ovulation and pregnancy. After talking nearly an hour the doctor obligingly answered questions on the subject.

President Carney, in a few well chosen words, explained how he had enjoyed serving as President for the past year and urged the same cheerful co-

operation from the members to the officers for 1934. He also asked for a rising vote of thanks to Doctor Pratt, which was given with enthusiasm.

E. M. HIGHFIELD, M.D., *Secretary*.

JACKSON COUNTY

The business meeting of the Jackson County Medical Society for December, 1933, was held at Foote Memorial Hospital Tuesday afternoon, December 12, at 4:30 P. M. After the minutes of the preceding meeting were read and approved Dr. Ransom gave the treasurer's report. This was audited by Drs. Hungerford and O'Meara and approved. Dr. John Smith gave a brief report of the meeting of the Board of Directors for the year.

The Society then proceeded to the election of officers for the coming year. Dr. Clyde Leonard was elected president; Dr. John Ludwick, president-elect; Dr. R. H. Alter, secretary; Dr. F. G. Ransom, treasurer; and Dr. Kudner, Dr. Crowley and Dr. Leahy on the Board of Directors. Dr. Riley and Dr. O'Meara were elected delegates with Dr. Clarke and Dr. Horatio Brown alternates. Dr. Leonard was appointed to act as the representative of the Medical Society at the Chamber of Commerce meetings. Dr. Horace Porter was elected as Editor of the BULLETIN for the coming year.

The application of Dr. Caldiera, who had made application for membership in the Jackson County Medical Society, was laid on the table as it was understood he was planning to leave the city. The applications of Dr. Page and Dr. Rice were accepted. The application of Dr. Tate will be voted upon at the next meeting.

Dr. Riley moved that the Society give Dr. Rodgers a weekly pension, the amount of which is to be decided by the newly elected Board of Directors. The motion was seconded by Dr. O'Meara and carried.

The new officers were installed at a dinner party held on Thursday evening at the Hayes Hotel, at which Dr. Gus Dwyer, Professor of Economics at Vanderbilt University, gave a very amusing and instructive talk on economic conditions. Dancing followed with Dr. Strong's orchestra furnishing the music.

R. H. ALTER, M.D., *Secretary*.

LIVINGSTON COUNTY

The November meeting of the Society was held at the State Sanatorium at Howell on the third of the month. A business meeting followed the usual dinner and current matters of importance were discussed. A letter was read from Dr. George L. LeFevre, of Muskegon, asking for the approval of our Society to the proposed appointment of Dr. Howard H. Cummings, of Ann Arbor, as counselor for the 14th District, to fill the vacancy caused by the resignation of Dr. James D. Bruce. The choice of Doctor Cummings was heartily approved.

The President, Doctor Leslie, appointed Dr. H. P. Mellus, of Brighton, chairman; Dr. J. J. Hendren, of Fowlerville; and Doctors Hollis Sigler and D. C. Stephens, of Howell, to act as a joint committee on "Preventive Medicine and the Care of the Indigents."

Dr. Earl I. Carr of Lansing was then presented to the Society for the second time within a year. Doctor Carr gave an interesting discourse on "Traumatic Surgery," illustrating his talk with some interesting x-ray films. Perhaps the outstanding point made by Doctor Carr is the necessity on the part of the physician or surgeon called to administer to a case of traumatic injury of taking all the possibilities of the case into consideration. This can best be done by a careful history of the accident and a

clear reconstruction in the mind's eye, by the surgeon, of exactly what happened. By this method one can often correctly judge the actual severity of the accident itself and thereby anticipate symptoms of hidden injury and future complications not apparent at first, especially with only a superficial examination of the case.

The regular December meeting was held at the Sanatorium, Friday, December 1. Dr. P. V. Wagley, assistant superintendent of the State Hospital at Pontiac, addressed the Society on "The Borderline Mental Case." Dr. Wagley presented an unique idea of the mechanism, diagnosis and treatment of the better-known psychoneuroses. Here again the detailed history is half the solution of the problem, and the average physician is usually too hasty in his consideration of the case to get at the root of the trouble. A tactful, painstaking inquiry concerning the emotional life of the patient is absolutely necessary to the correct diagnosis of most of these cases. An adequate investigation frequently requires many contacts with the patient before the true and intimate factors of the case are finally brought to light. Doctor Wagley urged an attitude of consummate self-confidence on the part of the examining physician as necessary in the successful management of the psychoneurotic individual.

Following the medical phase of the evening, a business meeting was called to order by the President, Doctor Leslie. Dr. H. G. Huntington presented a resolution to the effect that the County Society approves the McPherson Memorial Hospital, of Howell, as an efficient institution for the treatment of general medical and surgical cases. The resolution was adopted.

Doctor Mellus reported his attendance at the conference on Preventive Medicine held at the Herman Kiefer Hospital, at Detroit, on Wednesday, November 15. He also gave a résumé of the valuable work done by his joint committee on "Preventive Medicine and the Care of the Indigents." A motion was presented and passed that a copy of the complete report of this committee should be sent by the Secretary to the private practitioners throughout the county. This committee is working in collaboration with the County Welfare Directors.

The Secretary read the resolution on Hospital Practice as recently adopted by the Michigan House of Delegates and published on Page 601 of the November issue of the JOURNAL OF THE MICHIGAN STATE MEDICAL SOCIETY.

The annual election of officers then took place, with Dr. Bruce Stocking, of the State Sanatorium Staff, acting as temporary chairman. The following were reelected to office: President, George L. Leslie, State Sanatorium; delegate, Harry G. Huntington, of Howell; alternate delegate, J. J. Hendren, of Fowlerville; secretary-treasurer, R. S. Anderson, State Sanatorium.

R. S. ANDERSON, *Secretary-Treasurer.*

MECOSTA COUNTY

The regular meeting of the Mecosta-Osceola County Medical Society was held at the Western Hotel, Big Rapids, Tuesday, November 14, 1933, the guests of Drs. Yeo and Winsor.

Members present: Drs. Campbell, MacIntyre, Yeo, Treynor, Franklin, Bruggema, Chess, Grieve and Burkart. Dentists Pryor, Rogers, and Zetterstedt. Guest: Dr. C. C. Slemmons, State Commissioner of Health, Lansing.

The meeting was called to order by President Campbell at 7:45 P. M. On motion of Drs. Treynor and Yeo, the regular order of business was suspended

temporarily to permit Dr. Slemmons to get away as early as possible. Dr. Slemmons then gave a very interesting account of his visit to the leper colony at Carville, La., and compared it with other colonies that he had visited.

The chairman of the Program Committee then presented two reels of moving pictures showing gall-bladder diseases and operative measures to relieve.

The regular order of business was then taken up. The Secretary read the minutes of the last regular meeting; approved as read. Communication from the Secretary of the State Medical Society was read, calling attention to the new fee schedule for medical and surgical attendance to indigents, suggested by the Secretary of the State Society, but not yet approved by the State Welfare Commission. On motion, recommendations of the State Society relative to postponing any action on change of fees for services to indigents, concurred in. The secretary was instructed to inform all absentees of this action.

President Campbell announced the following named members on the Preventive Medicine Committee: John L. Burkart, chairman, Big Rapids; Louis K. Peck, Barryton; Jacob Bruggema, Evart.

Dr. Franklin moved that all absent members be informed of the action of this Society on the subject of welfare work and recommendations thereof. On motion, the president was authorized to appoint a committee to act in conjunction with the State and County Welfare organization on all matters of dispute pertaining to the fee for services to indigents of the county, wherever disputes arise. The president announced the members of the foregoing committee as Drs. T. P. Treynor, chairman; Glenn Grieve; G. H. Yeo; B. J. Franklin, and John L. Burkart.

A rising vote of thanks was tendered the speaker of the evening and our hosts, Dr. Winsor and Yeo, and the Program Committee.

JOHN L. BURKART, *Secretary.*

MONROE COUNTY

At its regular meeting November 16. the Monroe County Medical Society passed a motion that, as long as the fee schedule offered by the State Emergency Welfare Relief Commission was "temporary," the society would comply "temporarily" so that no hardship to the indigent ill would arise. However, the Society felt that the fees offered would not even pay the overhead cost of the work done, to say nothing of paying the physician a living wage. The Society voted to take no definite action until further information from the State Society arrives, because if the Welfare Commission is working on a state basis it appears logical that they should deal with the State Medical Society. Are we right in this? The Economics committee appointed consists of Drs. H. W. Landon, A. W. Karch, J. J. Siffer.

The proposed schedule first submitted was in many instances above the usual fees we receive here.

Dr. Philip D. Amadon, delegate, gave a report of the State meeting.

Dr. Neil Bentley, Detroit, spoke on "Ear Complications Accompanying Acute Respiratory Infections." We all profited much by Dr. Bentley's careful discussion of this subject.

Dr. Robert J. Williams was received into membership. Dr. Williams has recently come to Monroe to specialize in Eye, Ear, Nose and Throat diseases.

Monroe County Medical Society held its regular meeting at the Park Hotel, December 14, beginning with dinner at 6:30 P. M.

Dr. Osborne A. Brines, pathologist, Receiving

Hospital, Detroit, spoke on "Malignant Tumors of the Uterus."

Dr. Herbert W. Landon, chairman of the committee to deal with the County Emergency Welfare Committee, reported that the second fee schedule sent out by the State Society had been adopted. This schedule included no fees for surgery. The society requested the committee to continue its work and attempt to arrive at a system of fees for surgical work.

Dr. Harry Mealy, who has recently come to Monroe from Newton Falls, Ohio, to be surgeon to the Newton Steel Company, was the guest of the society.

Some members have offered to pay 1934 dues.

FLORENCE AMES, M.D., *Secretary*.

NORTHERN MICHIGAN

The regular meeting of the Northern Michigan Medical Society was held at the Hotel Perry, Petoskey, on November 9, 1933.

Meeting called to order by President Frank. Minutes of the last meeting were read and approved. Correspondence was read. Reports of various committees were heard, and the report of Dr. Wood, delegate to the State Meeting, was read and entered into the files.

The December meeting was held at the Hotel Perry, Petoskey, on December 14, 1933.

The meeting was called to order by President Frank. Minutes of the last meeting were read and approved, and correspondence was read.

It was moved and supported that the Society approve of the Charlevoix Hospital as an affiliated hospital of the Crippled Children's Commission. Carried.

Miss Foley, Emmett County welfare director, then spoke on the relation of the Emergency Welfare Relief and the physician. She also answered questions asked by various doctors.

By unanimous vote the following officers were elected for 1934: Dr. Fraley McMillan, Charlevoix, president; Dr. Walter Larson, Levering, vice president; Dr. Ervin Brenner, East Jordan, secretary and treasurer; Dr. Fred Mayne, Cheboygan, delegate; Dr. Ed. Christie, Cheboygan, alternate delegate.

It was moved and supported that dues for 1934 be \$10.00. Carried. Drs. Wessels and Mayhew of Mancelona were admitted to membership. Drs. Armstrong and Conway were appointed to the Program Committee for January.

E. J. BRENNER, *Secretary*.

SAINT CLAIR COUNTY

A regular meeting of the Saint Clair County Society was held at Port Huron Hospital, Tuesday, November 21, 1933. Supper was served to nineteen members and Dr. E. W. Caster of Yale, who was a visitor.

The meeting was called to order by President D. J. McColl at 7:15 P. M. The minutes of the preceding meeting were read and approved. Several communications were read from the Secretary of the Michigan State Medical Society. Doctor McColl made a verbal report of a recent conference he had with Mr. Glassford, chairman of the County Federal Emergency Relief Commission, who expressed the opinion to Doctor McColl that medical relief under the Commission would hardly be organized to function before January. The Commission had a fee list representing a cut of 70 per cent from the regular minimum fee list now in effect. Mr. Glassford stated that the Federal Government desired the indigent to receive medical relief from their regular family physicians, if possible.

A motion by Doctor Heavenrich, supported by Doctor McKenzie, was carried, as follows: "No member of the Saint Clair County Medical Society shall accept any calls under Federal Relief plan until the Society shall approve such plan." Doctor Heavenrich suggested an item be written for publication in the local newspaper giving our side of the matter of fees, etc. Doctor McColl expressed an opinion that this action would be unwise and premature. A motion by Doctor McKenzie supported by Doctor Burley was carried, as follows: "Each member of the Saint Clair County shall sign an agreement not to perform any professional services in cooperation with the County Federal Emergency Relief Commission until such time as a fee schedule agreed upon by the Saint Clair County Medical Society be adopted." Eighteen members in attendance signed such an agreement after adoption of the motion.

The Censors recommended that the applications of Dr. Donald Pollack of Yale and Dr. Garnet W. Ault of Port Huron be acted upon favorably by the Society. Ballots were passed by Doctors Brush and Schaefer and both physicians were elected to membership in the Society. Doctor Patterson, chairman of the Committee on Medical Relief to the Indigent, reported upon the applications of small hospitals in Yale and Capac to be approved by the Society so that crippled children could receive treatment in those institutions. No definite action was taken. Doctor Callery, chairman of the Committee on Preventive Medicine, made a short report of the recent meeting at the Herman Kiefer Hospital at Detroit. Doctor McColl was instructed by the Society to change the date of our next meeting to December 7 so as not to conflict with a combined meeting of the four luncheon clubs of Port Huron. A motion by Doctor De Gurse, supported by Doctor Patterson, in which the Society was to assume control of all clinics operating in Saint Clair County and approve same before members of the Society could serve therewith, was finally defeated by a vote of eight to five with several members not voting.

Dr. E. W. Meredith read a splendid and most comprehensive paper upon "Conditions Associated with Low Basal Metabolism." The essayist covered myxedema, cretinism, post-surgical hypothyroidism and other phases of the subject in a fine manner. Dr. A. B. Armsbury read a paper upon "Some Old and Maybe Forgotten Remedies." The doctor spoke briefly on aconite, belladonna, bryonia, gelsemium, arsenic, hydrastis, zinc phosphid and nux vomica. The paper was enjoyed very much by all who were present. Discussion of both papers followed and nearly every one present took part therein. Before adjournment President McColl expressed his pleasure at the large attendance in spite of the inclement weather and stated that he had known for a long time that members of the Society were capable of presenting very fine papers. The meeting adjourned at 10:10 P. M.

GEORGE M. KESL, *Secretary-Treasurer*.

TUSCOLA COUNTY

The regular annual meeting of the Tuscola County Medical Society was held November 9, 1933, at the Caro Community Hospital. By a unanimous vote the present officers were commended for the work in the past year and were retained for the ensuing term.

The Tuscola County plan for care of the indigent was brought up for consideration and, with the amended offer to include costs of drugs and sundries, was voted on and carried.

Dr. O. C. Johnson gave an address as retiring

president, which dealt with political economy, particularly with medical economics, and its relation to fundamentals of medical ideals. Dr. Johnson stressed the necessity of keeping the profession intact, also the relationship of patient to doctor.

The officers of Tuscola County Medical Society for the next year are: President, Dr. O. C. Johnson, Mayville; vice president, Dr. A. S. Rundell, Vassar; secretary-treasurer, Dr. L. L. Savage, Caro.

The secretary's report shows:

Number of regular meeting for 1932.....	11
Social meeting	1
Membership, beginning Dec. 1, 1932.....	24
New members	5
Average attendance	22

Scientific papers:

Public Health—Dr. E. C. Swanson.

Blood Count in Appendicitis—Dr. T. E. Hoffman.

Benign Hypertrophy of Prostate—Dr. R. R. Howlett.

Maternal Death Rate in U. S. A. and Michigan—Dr. B. Starmann.

Diagnostic Clinic—Dr. G. H. Kaven.

Economics:

Trends in Medical Economics—Dr. L. L. Savage.

Summary of Majority Report—Dr. I. D. McCoy.

Summary of Minority Report—Dr. Geo. Bates.

Address by President—Dr. O. C. Johnson.

LLOYD L. SAVAGE, M.D., *Secretary.*

WOMAN'S AUXILIARY, MICHIGAN STATE MEDICAL SOCIETY

MRS. ELMER L. WHITNEY, President
18224 Wildemere Ave., Detroit

MRS. C. L. STRAITH, Secretary-Treasurer
19305 Berkley Road, Detroit

A NEW YEAR

We are beginning another year in our organization, a year in which I am hoping we may grow and become more useful to our medical societies. To do this we need to have a clear conception of the purpose of our organization.

The great reason for the existence of the auxiliary is to assist the medical profession in whatever way they consider advisable and suitable in solving the problems confronting them. It is important that we work very closely under the guidance of our Advisory Board, otherwise we may do more harm than good.

Each community has its own particular problems besides the ones confronting the state. To help intelligently, every member should thoroughly understand the situation on which she is to act. For this reason, we must devote the largest part of our auxiliary time and efforts to self education. We can not expect to educate others until we are thoroughly educated ourselves.

The greatest service we can render to the medical profession and to the public is to carry this knowledge out to the laywomen through our daily contacts in clubs, churches, and social gatherings. The Auxiliary members who is already an active worker, a director, or board member of another organization has a tremendous power in her influence over health programs and in moulding public opinion. Each auxiliary member should make an effort to become active in at least one other group and to accept positions of leadership on boards carrying on public health projects.

After all it is the women, mothers of families, who control the health of the public to a great extent. It through our contacts with women's clubs,

with their millions of members, consisting of intelligent wives and mothers with voting powers, that we may be of most service. These women are willing and anxious to learn the best way for prevention of disease, the facts that pertain to the health and welfare of their families and of the entire community, and are influenced in their decisions by you, when they have confidence in the knowledge coming to them from you, not as a doctor's wife, but as a friend and co-worker.

This incident occurred this last week at a meeting given under the auspices of the Wayne County Auxiliary to which members of two hundred fifty women's clubs had been invited. Dr. Clarence C. Little gave a talk on "How Women Can Help Prevent Cancer." The talk was followed by questions and discussion. Someone in the audience had very recently lost a member of her family by death from cancer which had been treated by a serum. This question from a laywoman followed: "Why doesn't the Medical Society protect the public from quack doctors?" This does cause us to stop and wonder if we are doing all we can to educate the public.

I believe every doctor's wife should become a member of the Auxiliary. So many times I have heard this excuse, "Oh, I already belong to so many clubs!" That is all the more reason the Auxiliary needs you who have already established contacts and you need the Auxiliary equally as much, that you may have the exact knowledge, the true facts, and know the way to present these facts that they will be the most helpful to the medical profession and to the public.

I am sure that every doctor's wife feels that her husband's profession is one of the finest. For that reason, regardless of the other organizations to which she belongs, she should wish to center her interest and energies on the work that lies nearest her home and her heart and be willing and glad to be of whatever service she can.

(Mrs. E. L.) IRENE H. WHITNEY,
President.

WAYNE COUNTY

Tuesday, December 5, was another red letter day for the Woman's Auxiliary to the Wayne County Medical Society. On this date the third regular meeting was held at the Book Cadillac Hotel at one o'clock. The time was advanced from the usual hour to make it possible for doctors to attend and to accommodate the speaker. There was a capacity crowd as the meeting was open to the public and letters of invitation had been sent to the Parent-Teacher Association and all federated clubs in the city.

Mrs. Claire L. Straith, president of the Auxiliary, opened the meeting, and Dr. Alexander W. Blain, president of the Wayne County Medical Society, spoke a few words of greeting. After the recording secretary, Mrs. Audrey O. Brown, read the minutes of the last meeting, Mrs. Frank W. Hartman, program chairman of the organization, took charge. She presented Dr. H. Wellington Yates, who introduced the speaker of the day, Dr. Clarence Cook Little.

Dr. Little, former president of the University of Michigan and now director of the Roscoe B. Jackson Memorial Laboratory for Cancer Research at Bar Harbor, Me., spoke on "How Women Can Help Control Cancer."

Dr. Little said that doctors need the assistance of women in fighting cancer to spread preventive information among their families and friends. He said that modern loose-fitting fashions are helping to eradicate common types of cancer among women—anything causing inward or outward irritation to

the body being provocative of cancer. "Because women have become expert in skin hygiene, cancer of the skin is seldom found among them," Dr. Little declared. He also said that the weapons with which cancer can be fought are exceedingly simple, and that "prudery, ignorance, and delay" are the three worst enemies of cure. He stressed the necessity for periodic examinations, especially after the age of thirty-five.

There was a question period after the lecture, and this was followed by the business meeting. Later a What-not and Bake Sale was held.

During the month there was another Bridge Tournament at the club house. This was on Tuesday evening, November 21. There were two sewing meetings—one at the home of Mrs. A. Gerald Walters on November 23, and the other at the home of Mrs. Clarke M. McColl on December 8. The Welfare Committee, which is in charge of these, reports that four of the maternity kits, being made by the ladies for the use of members of the Wayne County Medical Society in their charity work, are nearly completed.

On November 22 Mrs. Milton A. Darling, chairman of the membership committee, entertained this group at a desert-bridge at her home.

November 27, Mrs. Roger V. Walker called a meeting of the social committee at the Women's City Club.

The officers and committee chairmen of the Woman's Auxiliary were the guests of Mrs. Claire L. Straith, president, and Mrs. Frank W. Hartman, vice president, at a most delightful luncheon and board meeting at Mrs. Straith's home on Tuesday, November 28.

But the date which was voted by the youngest group the most important of all was December 16. On this afternoon Santa Claus visited the Wayne County Medical club house; and to heap thrills upon thrills a magician accompanied him. A most delightful play, "A Christmas Dream," was also on the program for the Children's Party. Nina Maris, danseuse, presented some of her pupils in this fantasy. Chief among the characters were Lucille Pickard, Martha Sutton, and Bill Pickard. Anton Carl Boyke, pianist, assisted with the musical background of the play. The members of the Auxiliary were hostesses to their young guests on this occasion, and Mrs. Orlando W. Pickard was in charge of the program.

LORRAINE E. LORANGER,
Publicity Chairman.

GENERAL NEWS AND ANNOUNCEMENTS

Dr. L. J. Garipey and family of Detroit left December 22 from New York on the Statendam for a two weeks' cruise in the Carribean Sea.

Two outstanding medical events of the past month in Wayne County are the annual Highland Park Clinic and the address by Dr. Clarence Cook Little, December 4, before the Wayne County Medical Society on the subject of "Cancer." Both were greeted by capacity audiences.

Dr. T. G. Yeoman of Saint Joseph, Michigan, was elected president of the Michigan State Board of Registration of Medicine. Dr. J. D. Brook of Grandville was made vice-president and Dr. J. Earl McIntyre of Lansing was re-elected secretary and

executive officer; Dr. J. J. Walch was reappointed member of the board. The annual meeting took place on October 13.

Past-Presidents' Night of the Wayne County Medical Society will be held on January 15, 1934. After the scientific meeting, a social hour will be held in the club rooms of the Society to honor Past-President Frank A. Kelly (1923-24) and Past-President Henry A. Luce (1925-26). This will be third in the series of such affairs to bring recognition to those who in the past helped lay the foundation stones on which the organization now stands.

Executive Secretary Wm. J. Burns is publishing in the *Detroit Medical News*, weekly bulletin of the Wayne County Medical Society, a series of articles explaining Michigan's laws and Federal enactments touching the practice of medicine. Mr. Burns is a lawyer who has been associated with medical organization work since 1925. His articles to date have included treatises on the FERA, the Michigan Afflicted Child Act, and the Michigan Afflicted Adult Act.

The Beaumont Foundation in connection with the Wayne County Medical Society will hold the annual lectures at the auditorium of the Institute of Arts on the evenings of February 19 and 20, 1934. The speaker will be Dr. John F. Fulton, Sterling Professor of Physiology, Yale University. Professor Fulton is a former Fellow at Magdalen College, Oxford University. The 1934 series will consist of two instead of three lectures. A cordial invitation is extended to every member of the Michigan State Medical Society.

A meeting to discuss economic phases of the practice of medicine was held under the auspices of the Wayne County Medical Society on December 20. This meeting was very largely attended. Mr. W. J. Burns, executive secretary of the society, explained in detail the Federal grant for the medical care of the indigent and also the operation of the Afflicted Child's Law in this state. Mayor John W. Smith of Detroit made an address which appears in this issue of the JOURNAL. This address is printed because the subject discussed therein concerns every county in this state. Mr. Smith's address was the outcome of a recent visit to Washington.

"Michigan State Medical Society Night" is the title of the program of the Wayne County Medical Society's general meeting of January 15, 1934. The program will sponsor the presence of the officers and the council of the State organization. The subjects and lecturers will be:

1. "State Society Objectives"—President Geo. L. LeFevre, Muskegon.
2. "State Institutions"—President-Elect Rich. R. Smith, Grand Rapids.
3. "Council Responsibilities"—Chairman R. B. Corbus, Grand Rapids.
4. "The State Society, its Activities, Strength and Weakness"—Secretary F. C. Warnshuis, Grand Rapids.
5. Questions and Inquiries.

MEETING OF THE CANCER COMMITTEE OF THE MICHIGAN STATE MEDICAL SOCIETY

A meeting of the Cancer Committee of the Michigan State Medical Society was held in the Wayne County clubrooms on December 4, 1933. The members of the Cancer Committee are as follows: Dr. Osborne A. Brines, Detroit, chairman; Dr. C. V. Weller, Ann Arbor; Dr. Henry J. Vandenberg,

Grand Rapids; Dr. J. G. R. Manwaring, Flint; and Dr. A. R. McKinney, Saginaw.

The following attended the meeting as guests of the Committee: Dr. Clarence Cook Little, Bar Harbor, Me.; Dr. Frank L. Rector, Evanston, Ill.; and Dr. H. Wellington Yates, Detroit, all three representing the American Society for the Control of Cancer; Dr. C. C. Slemmons and Dr. Deacon, of the State Health Department; and Dr. Charles E. Dutchess, former chairman of the Committee. Plans were formulated for a more exhaustive study of the cancer problem in Michigan and for the development of a comprehensive educational program throughout the state.

NORTHERN TRI-STATE MEDICAL SOCIETY

The annual meeting of the Northern Tri-State Medical Society will be held at Flint, April 10, 1934. The Tri-State Medical Society, as is well known, includes Michigan, Indiana, and Ohio. The place of meeting is the auditorium of the Hurley Hospital, Flint. Lunch will be served in the dining rooms of the hospital and a banquet will be held in the evening in the Durant Hotel. The program is as follows:

- 8:00 A. M. Dr. Wm. Clift, Flint, Mich.—“Upper Cervical Dislocations.”
- 8:15 A. M. Dr. A. Dale Kirk, Flint, Mich.—“Infant Mortality.”
- 8:30 A. M. Dr. M. S. Chambers, Flint, Mich.—“Principles in Treatment of Diseases of the Heart.”
- 8:45 A. M. Dr. George Curry, Flint, Mich.—“Musculo-Spiral Paralysis.”
- 9:00 A. M. Dr. Carl A. Hedblom, Professor of Surgery, University of Illinois, Chicago—“The Selective Surgical Treatment of Pulmonary Tuberculosis.”
- 9:45 A. M. Dr. Clifford G. Grulee, Professor of Pediatrics, Rush Medical College, Chicago, Ill.—“Some Interesting Conditions in the Newly-born Infants.”
- 10:30 A. M. Dr. Wm. M. Donald, Professor of Medicine, Detroit College Medicine and Surgery, Detroit, Mich.—“What to Do When the Diabetic Comes.”
- 11:15 A. M. Dr. George C. Hale, Professor of Medicine, University of Toronto, Canada, London, Ont., Can.—“Sleep.”
- Noon. Luncheon.
- 1:00 P. M. Dr. Frank Smithies, Chicago, Ill.—“Regional, Infectious, Ulcerative Colitis.”
- 1:45 P. M. Dr. Norman F. Miller, Professor of Obstetrics, University of Michigan, Ann Arbor, Mich.—“The Anticipation and Management of Toxemia of Pregnancy.”
- 2:30 P. M. Dr. Herman L. Kretschmer, Professor of Urology, Rush Medical College, Chicago, Ill.—“Changing Trends in the Treatment of Prostatic Obstructions.”
- 3:15 P. M. Business Meeting.
- 3:30 P. M. Dr. Louis J. Hirschman, Professor of Proctology, Detroit College of Medicine and Surgery, Detroit, Mich.—“The Sclerosing Treatment of Hemorrhoids—Its Indications and Limitations.”
- 4:15 P. M. Dr. Wilder Groves Penfield, Professor of Neurological Surgery, McGill University, Montreal, Quebec, Canada—“Epilepsy.” “Classification and Management of Cases.”
- 6:00 P. M. Banquet—Address: Dr. Frank H. Lahey, Director of Lahey Clinic, Boston, Mass.—“Management of Goiter.”

WHITNEY FAMILY'S INTEREST IN MEDICINE

The afternoon of Sunday, December 3, will live long in the memory of the many members of the Wayne County Medical Society and the Auxiliary who attended the reception in their club house to honor the Whitney family and welcome them back to their old home. This affair was occasioned by the visit to Detroit of Mr. John Jacob Hoff and his wife (the former Grace Whitney) of Paris, France. Others of the immediate family present were Mr. Tracy McGregor, of Washington, D. C., Mrs. Hoff's brother-in-law; Mrs. David C. Whitney, her sister-in-law; Mrs. David M. Whitney, her niece; and Mrs. David M. Whitney, Jr., her grand-niece.

Mrs. Claire L. Straith, president of the Woman's Auxiliary, spoke a few words of greeting to the Whitney family and expressed the appreciation of her organization for the use of this beautiful home. She presented Dr. Alexander W. Blain, president of the Wayne County Medical Society, who in turn thanked the Whitney family for their generosity in making the building available to the Society.

Mrs. Hoff spoke to the gathering, reminiscing on her life in this lovely old mansion. She requested to speak from the archway between the library and the hall, as that was the spot where she stood when she was married.

She spoke on the “noble, upright life” of her father, who built the house, and said that she felt she was expressing his sentiment in speaking at this time. She said, “It means much to us that this house, filled with sacred memories, is now given over to such a glorious organization as the Wayne County Medical Society, and that the society's spirit of unity and coöperation should be centered here. The doctors have had a vital part in the making of Detroit, and today, when the need is for home-making, the doctors are the very foundation of our homes.”

She spoke of the breakfast hour, when the dining room curtains were drawn exactly at 8 o'clock—not one minute before or after. How the family came out to gather again at a long table in the hallway to open the morning mail. How her father preferred a couch in the hall to a more secluded spot for his nap, so he could “hear what was going on while he slept.”

Then she recalled her wedding feast in the dining room on April 3, 1900, when the health of the bride and groom was drunk with Apollinaris water.

Mr. McGregor also spoke. He said, “Members of the family who lived here always had a medical slant. The late Mrs. David Whitney was a member of the board of Woman's Hospital, and Mrs. McGregor was a volunteer social worker, following in the steps of her sister, Mrs. Hoff.”

“This afternoon I remember two things in particular about Mr. Whitney. I remember that he was a good patient for a doctor, because he always did what his doctor told him to do; and I remember how he loved the timber in this home. Due to his lumber interests he knew wood and its use, and the beautiful paneling in this house expresses his love of trees and what came out of them.”

Dr. George McKean, a trustee of the organization, said that the home would mean much more to the Society from having had these intimate touches of family association.

Musical selections were played by Dr. Robert Berman and Dr. Victor Marburger; and then tea was served in the dining room, with Mrs. Blain and Mrs. H. Wellington Yates presiding at the tea table.

The editor is indebted to Mrs. C. B. Loranger, chairman of the press committee of the Woman's Auxiliary of the Wayne County Medical Society, for the splendid write-up of this social event.

THE DOCTORS' LIBRARY

HISTOLOGY. By S. Ramon-Cajal, M.D., F.R.S., LL.D., Director, Royal Cajal Institute for Medical Research; Emeritus Professor of Pathology, University of Madrid; Nobel Premiate in Medicine. Revised by J. F. Fello-Muñoz, M.D., Professor of Pathology, University of Madrid; Authorized translation from the tenth Spanish edition of M. Fernán-Núñez, M.D., Professor of Pathology, Marquette University school of medicine. 535 ill., 738 pp., photograph of Cajal. \$8.00. Wm. Wood & Co., Baltimore, 1933.

This textbook by the dean of European histologists has passed through ten editions in its native language, and now, the tried and mature work is available to English readers. In organization, in emphasis and in the abundance of illustrations showing sections stained by the silver precipitation technic, the work is distinguished from the current American texts. The whole field of histology is well surveyed and the section on nervous tissues is worthy of the master neuro-anatomist. The work is well indexed and contains an appendix on histological technic.

STARLING'S PRINCIPLES OF HUMAN PHYSIOLOGY. Edited and revised by C. Lovatt Evans, D.Sc., F.R.C.P., F.R.S., Jodrell Professor of Physiology in University College, London. The chapters on "The Central Nervous System and Sense Organs" revised by H. Hartridge, M.A., M.D., Sc.D., F.R.S., Professor of Physiology at St. Bartholomew's Medical College. Sixth edition, enlarged and revised. Octavo, 1,122 pages with 562 illustrations, 10 in color. Cloth, \$8.75 net. Philadelphia: Lea and Febiger, 1933.

Those acquainted with former editions of Starling's Physiology will welcome this revision which embodies the latest findings in a rapidly changing branch of Medical Science. We have here presented a general view of the entire subject. As medicine advances, more clearly is seen the importance of keeping informed in regard to the latest research results in the subject of function. This work is strongly recommended as affording a clear and precise presentation of the principles of normal physiology.

OBSTETRICS AND GYNECOLOGY. By eighty leading specialists. Edited by Arthur Hale Curtis, M.D., Professor and Head of the Department of Obstetrics and Gynecology, Northwestern University Medical School; Chief of the Gynecologic Service, Passavant Memorial Hospital, Chicago, Ill. Complete in three volumes and separate desk index. 3,500 pages with 1,664 illustrations, many in colors. Per set, cloth \$35.00 net. Philadelphia and London: W. B. Saunders Company, 1933.

The third volume of Curtis' Gynecology and Obstetrics with desk index completes the set. This comprehensive volume, like the other two, is written in most part in a simple, direct way accompanied by many illustrations which reflect the practice of the thirty-seven contributors in an admirable manner.

Chapters 65 and 66 by Joseph L. Baer and Lillian K. P. Farrar, respectively, dealing with retrodisplacements and injuries of the pelvic floor are clearly written and accompanied by many original illus-

trations which are well worth careful perusal. Several chapters are by Emil Novak on dysfunction of the uterus and ovaries, pathology of the endometrium and gynecological endocrinology which command special attention because of the outstanding work of this author. Of interest to everyone is the timely written and beautifully illustrated chapter on Lesions of the Cervix by Frederick C. Holden—your reviewer feels this chapter is worth the price of the volume. Over 180 pages are devoted to x-ray and radium, giving a comprehensive idea of their value in gynecology. All in all, these three volumes of Curtis are outstanding in their preparation and the publishers have nearly outdone themselves in the character of this completed work.

H. WELLINGTON YATES.

FOOD, NUTRITION AND HEALTH. By E. V. McCollum, Ph.D., Sc.D., and J. Ernestine Becker, M.A. Professor, and Associate, of Biochemistry, School of Hygiene and Public Health, Johns Hopkins University, Baltimore, Md. Third Edition Rewritten. Published by E. V. McCollum and J. Ernestine Becker, East End Post Station, Baltimore, Md. Price \$1.50 Postpaid.

While this little work is rewritten so as to be intelligible to the educated layman, the standing that the authors hold as nationally known nutritional chemists will render the book of more than usual value to the medical profession. The authors go into detail in regard to the much discussed subject of vitamins and have clarified the subject very satisfactorily. Among other subjects dealt with are The Protein Element in Nutrition, The Mineral Elements in Nutrition, Life History in Relation to Diet, Dietary Properties of Foodstuffs, Coffee and Tea, The Reducing Diet, How to Increase Weight, and The Diet and Acidosis. The fact that there has been a demand for six reprintings and revisions of this work since 1925 indicates its popularity.

METABOLIC DISEASES AND THEIR TREATMENT. By Dr. Erich Grafe, Professor of Medicine and Director of the Clinic of Medicine and Neurology at the University of Würzburg, Germany; Eugene F. DuBois, M.D., Medical Director, Russell Sage Institute of Pathology, Professor of Medicine, Cornell University Medical College, New York; and Henry B. Richardson, M.D., Associate Professor of Medicine, Cornell University Medical College. New York. 551 pages, illustrated with 37 engravings. Philadelphia: Lea & Febiger, 1933. Cloth, \$6.50.

The important discoveries of the last few years have put the treatment of metabolic diseases on a more secure footing than it has formerly had. In this first American edition the subject matter of the original work has been completely revised and all the latest advances in this field have been included.

The work opens with a general discussion of metabolism and nutrition covering the physiochemical action of the various foods. After a consideration of the nature and treatment of nutritional disorders, the chief metabolic diseases are treated in detail with particular attention to Obesity, Habitual Undernutrition (Magersucht), Diabetes Mellitus, Diabetes Insipidus, Gout, Alcaptonuria, Cystinuria and Aminuria. The appendix covers briefly other conditions not properly classified as metabolic diseases but usually associated with them.

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END RESULTS IN ARTHROPLASTIES OF THE HIP*

WILLIS C. CAMPBELL, M.D.†
MEMPHIS, TENNESSEE

A report of the end results of arthroplasty of the hip was presented in 1926, at the request of the Program Committee of the American Orthopedic Association. Since that time a much wider experience has been acquired and sufficient time has elapsed to determine the endurance and physiological reaction after arthroplasty of the hip in an appreciable number of cases. Previous publications have considered in detail the etiology, pathology and physiology of ankylosis in the hip joint and the indications for the operation. Therefore, on this occasion the remarks will be confined chiefly to a presentation of the end results, following arthroplasty in monarticular and bilateral ankylosis.

The operative procedure has also been described previously, but an improvement in technic has been made since the former publication. The U-shaped incision of Kocher has been discarded and the anterior ap-

proach as described by Smith-Peterson is employed routinely; the hip joint may be reached by following the fascial planes between the tensor fascia lata and the sartorius, without severance of the muscle fibers. The joint capsule is severed transversely. The osseous ankylosis between the superior wall of the acetabulum and superior surface of the head of the femur is divided first. A large Murphy chisel is used and should

*Read before the annual meeting of the Michigan State Medical Society, Grand Rapids, September 13, 1933.

†Dr. Willis C. Campbell, M.D., is a graduate of the University of Virginia School of Medicine, 1904. He is Professor of Orthopaedic Surgery, University of Tennessee School of Medicine.

be driven into the bone at right angle to the pelvis in order to secure a horizontal plane to the roof of the acetabulum; otherwise the socket may slant upward and outward,

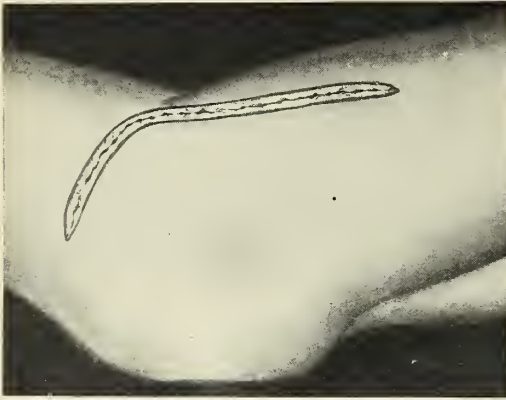


Fig. 1. Skin incision for arthroplasty of hip.

which is obviously conducive to instability or even actual dislocation. To sever the remainder of the osseous between the inner and inferior aspect of the head and the acetabulum it is usually necessary to employ a curved woodcarver's chisel. After severance of the ankylosis the hip is dislocated, care being taken not to strip the soft tissues from the neck and trochanteric region of the femur. Severance of the ankylosis destroys one of the chief sources of blood supply to the head of the bone, and, if there is further interference of circulation by extensive dissection, aseptic necrosis of the head may ensue. The operation for making a new joint is facilitated by wide exposure, but the physiology of the part must be duly regarded if satisfactory restoration of joint contour is to be maintained.

If possible the head of the femur should be made slightly smaller than normal and the acetabulum about the normal size. There should be a space of from one-half to three-fourths of an inch between the head and the acetabulum at all points. If the relation between the head and acetabulum is out of proportion there will be motion but with instability, resulting in a typical listing limp. The exact relation between the head of the femur and the acetabulum after operation depends on the quality of the bone structure and the extent to which the disease process has involved the head, neck and acetabulum. For example, the head of the bone may be atrophic or show numerous small cavities filled with fat, so

that more bone than is desired must be removed. In consequence the size of the head and the depth of the acetabulum is not an arbitrary equation but an individual one. In bilateral ankylosis or in those with deformity of such a degree as to prevent weight-bearing, osseous structure is always defective.

A separate incision is made over the lateral aspect of the thigh and a strip of fascia lata, approximately 4×6 inches, is excised and folded longitudinally at about the center. This double layer is then placed over the head with the fold at the junction of the inferior aspect of the head and neck, and anchored with one or two sutures to the soft structures at this point, or to the bone through small drill holes. One flap is drawn over the head and sutured to the remains of the capsule at the junction of the head and neck on the superior aspect, thus investing completely the head. The other free end is grasped at each corner by an assistant with small forceps and with a bone skid introduced between the two layers, the head is carefully reduced into the socket. After reduction, the upper portion of the folded fascia lata approximates the raw surface of the acetabulum, investing same. The free end of this fold is attached to the bone or capsule at the superior margin of the acetabulum by three or more interrupted sutures of No. 1 chromic catgut. Thus is secured a double layer of fascia lata reproducing a facsimile of the primitive embryological joint. The rough outer surface of the fascia lata is applied to the bone of the head and acetabulum, as this surface is composed of loose areolar tissue adaptable to invasion by new blood vessels from the interosseous spaces. The smooth glistening inner surface of the fascia forms the articular surface of the entire joint, thereby facilitating motion. No effort is made to close the capsule or suture the muscles, as they are satisfactorily approximated when the head is replaced into the acetabulum. The deep fascia and muscular attachments to the crest of the ilium are resutured by No. 1 chromic catgut, and the skin closed in routine manner.

When the operation is completed a double spica cast is applied with excessive padding about the extremity and with traction of from ten to twenty pounds weight on the leg. On the fourteenth day the cast is bivalved, and active and passive movements instituted by the patient through the aid of

a system of sling and overhead pulleys. The patient remains in the bivalved cast for a period of four to six weeks, when walking is permitted with the aid of crutches. Great

stances one cannot expect to restore a normal anatomical joint, but arthroplasty may induce by surgery nature's method of repair. A joint similar to one formed after arthro-

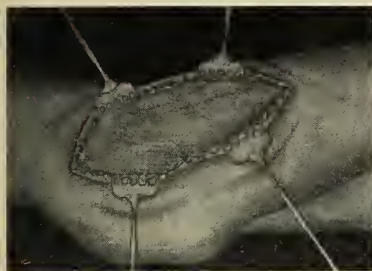


Fig. 2. Exposure of muscles.

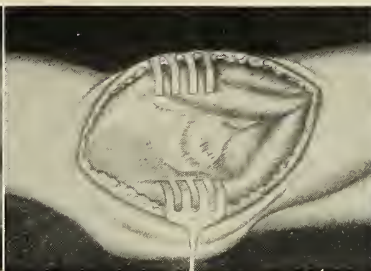


Fig. 3. Complete exposure of ankylosed hip, being careful not to remove any more attachments of the soft tissues about the neck of the femur than is absolutely necessary.

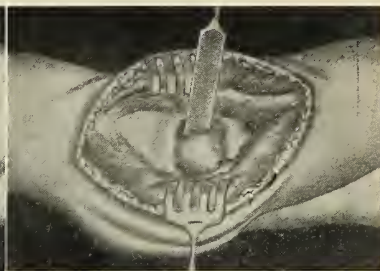


Fig. 4. Excision of ankylosis and dislocation of the head, being careful to alter the contour as little as possible.



Fig. 5. Smoothing off the head with rasp, leaving the head large and globular.

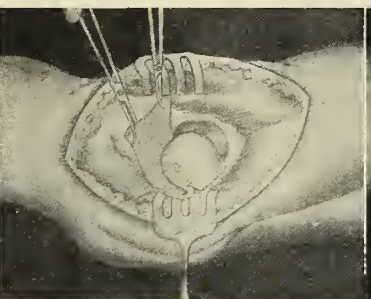


Fig. 6. Interposition of free fascia lata placed to cover the head and acetabulum, making a double layer or practically closed sac when the reduction is made.

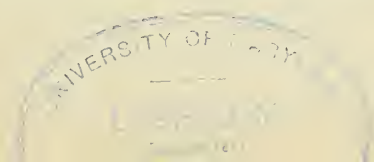


Fig. 7. Complete reduction; new joint completely relined with fascia lata.

care must be exercised for six months to prevent flexion and adduction contracture, and if there is the slightest tendency to such a deformity the patient is required to hyperextend the hip at intervals during the day by lying prone on a firm surface with sand bags under the lower anterior aspect of the thigh. Also he may be placed in a cast or splint to maintain the proper position at night and at certain periods during the day. Physiotherapy in various forms is of value, but especial attention must be given to cultivation of the hip muscles, particularly the flexor group, otherwise motion will be in excess of function. As previously emphasized, the status of bone structure must be the guide to increased weight-bearing. In those with extensive osteoporosis an abduction brace with a Thomas-ring is employed until the roentgenogram demonstrates that there is a sufficient increase in density.

Even under the most favorable circum-

plasty is occasionally observed after complete destruction of a joint by a pathological process. This is more often illustrated in the hip than in any other joint, and good function may at times be secured after the articular surfaces of the head of the femur and acetabulum have entirely disappeared. In the Sir Robert Jones lecture entitled "The Physiology of Arthroplasty," the author demonstrated that the types of joints secured after arthroplasty and after a destructive process when ankylosis did not occur, were histologically and mechanically identical. Opportunity has been afforded of exploring joints from one or two years after arthroplasty. At the end of one year there is a joint cavity with synovial fluid, and the structure of the new articular surface is composed from within outward of three strata: fibrous tissue, fibrocartilage and spongy bone, the fibrous tissue of the osseous interspaces being continuous with



the deeper portion of the fibro-cartilage. Even after one year the fibrous layer resembles so closely the original fascia lata that it is strongly suggested that this struc-

the end result, namely, etiology, pathology and distribution of ankylosis (single, bilateral or multiple), and duration. No method of analysis is absolutely satisfactory, but for



Fig. 8. Photomicrograph of fascia lata. (a) Inner or visceral surface which is smooth and glistening. (b) Outer surface which consists of loose areolar tissue.

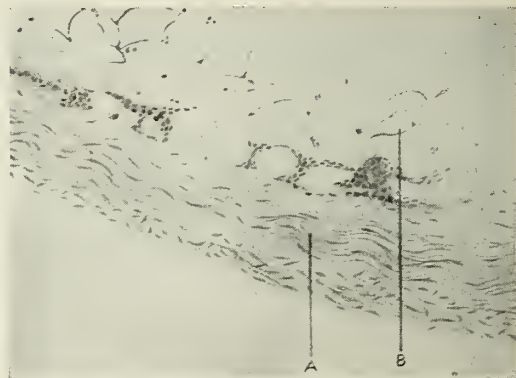


Fig. 9. Photomicrograph of specimen of articular surface removed one year after arthroplasty, showing layer of dense fibrous connective tissue containing few cells closely attached to a cartilaginous layer and underlying cancellous bone.

ture has become revitalized and not substituted. A synovial membrane is reformed which secretes lubricating fluid, with usage the fibrous layer is gradually replaced with cartilage. There may be irregularities in the contour of the joint, which have been shown to be due to aseptic necrosis following operative disturbances in circulation. In many instances such irregularity is consistent with excellent function and endurance. However, this complication can usually be avoided to a large degree by care not to impair the circulation by stripping the soft tissues from the adjacent bone.

TABLE I

A—Monarticular	Operations	Cases
1. Acute pyogenic infection	43	43
2. Low grade infections	9	9
3. Traumatic	5	5
	57	57
B—Bilateral		
1. Acute pyogenic	29	15
2. Progressive polyarticular (atrophic rheumatoid)	41	22
	127	94

An analysis of all cases of arthroplasty of the hip cannot be made collectively, as there are many factors which materially influence

the purpose of description it has been found convenient to classify the cases according to (1) distribution (monarticular or polyarticular), (2) etiology or pathology. One hundred twenty-seven arthroplasties form the basis of this discussion, and may be divided as shown in Table I.

Acute pyogenic infection is the most frequent cause of ankylosis. The Neisser diplococci is undoubtedly the most frequent etiological agent in monarticular infections, but an accurate history cannot always be secured. The pathological process induced by each of the pyogenic bacteria is so nearly identical that the differentiation of gonorrheal arthritis, staphylococcic arthritis, etc., as separate clinical entities, is not warranted. At operation, four types are encountered. First, those in which the infectious process has been confined largely to the joint cavity and the adjacent bone is invaded only a short distance beneath the articular surfaces. Since it is possible to reconstruct the new joint in normal osseous tissue, this type will give the most favorable results. Secondly, those in which there has been an extensive osteomyelitis involving the entire upper extremity of the femur and the ilium, terminating in dense eburnated bone which does not form so satisfactory a basis for the natural re-formation of the new articulation as the first type, because the circulation to the joint surfaces is more or less sluggish.

This type of bone is not suitable for arthroplasty when it occurs about the knee joint, but it does not contraindicate arthroplasty in the hip. Thirdly, when there has been

ral changes are apparently the same as those encountered in acute pyogenic infections confined to the articular surfaces. The so-called "Coxa Malum" may be encountered



Fig. 10. End result following arthroplasty of the hip. Note width of joint space and regularity of articular surfaces.

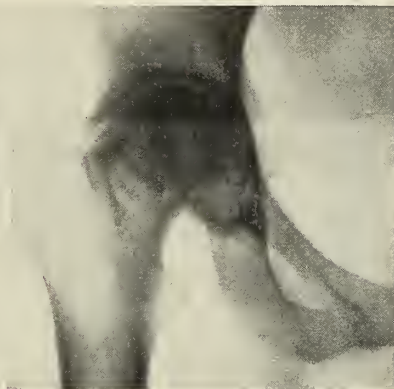


Fig. 11. X-ray showing end result following arthroplasty of hip.

extensive loss of continuity of the head of the femur and the acetabulum with more or less upward displacement of the head. Fourthly, cystic areas, usually filled with fatty marrow, may be encountered in the head of the bone, which requires more resection of the head than is desirable. This type is observed more often in those in whom there has been no weight-bearing, and is more frequent in bilateral ankylosis than in unilateral.

After the pathological process has completely subsided the reconstruction of a new joint is feasible, but the nature of the joint secured depends much on the status of the osseous structure and the contour of the parts involved. If there has been extensive destruction of the head of the femur or acetabulum it is obviously not possible to secure the same degree of efficiency as when it is possible to conserve even approximately the normal relations. However, it is often surprising to note the degree of function that may be acquired after arthroplasty in which the contour of the parts is far more normal.

Arthroplasty of the hip is indicated in all low grade monarticular affections after the process has subsided, with the exception of tuberculosis. An afebrile type of infectious arthritis is often the cause of the condition and usually there is fibrous ankylosis, pain on motion, and superficial involvement of the osseous surfaces; otherwise the structu-

with massive hypertrophy of the head and neck of the femur, with often a hood of bone extending about the margins of the acetabulum. This condition may be caused by any process that induces gross articular incongruity, as infectious arthritis, coxa plana or epiphyseal separation. The structure of the bone is so dense and the head of the femur and acetabulum so large that even after reconstruction the desired proportion cannot always be secured, or, if secured, the circulation to the head may be so defective that satisfactory contour cannot be maintained.

Ankylosis of the hip as the result of trauma is comparatively rare, but as there has usually been no infection, the area involved is most favorable for operative procedures. However, there is often such extensive comminution of the head and the acetabulum that the desired relations cannot be obtained.

The end result after arthroplasty of the hip should not be estimated until the elapse of two years, as it has been found that this period of time is required by nature for complete reconstruction of the new articulation. In some instances there has been an increase in the range of motion after this period and frequently excellent function has been secured earlier, and maintained for many years thereafter, but as definite changes which affect the functional status may become apparent after twelve months,

final conclusions should not be made before the end of the second year.

The end results of arthroplasty in unilateral ankylosis are summarized in Table II.

complicated by fixing the head against the acetabulum, by the contraction of the pelvic and femoral muscles and employing compensatory movements of the spine. Pain after



Fig. 12. X-ray one year following arthroplasty of hip. Later there occurred aseptic necrosis and absorption of the head of the femur, due to interference with the blood supply.

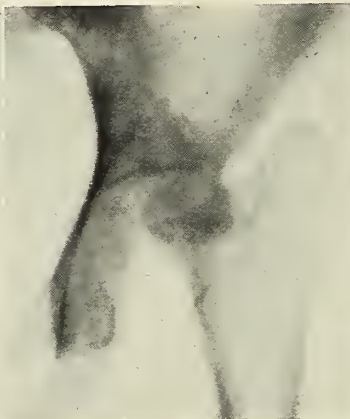


Fig. 13. Same as Figure 12 one year later, showing necrosis of head of femur.



Fig. 14. Same as Figure 12 and Figure 13 two years later, showing complete absorption of head of femur, demonstrating necessity of conservation of circulation.

TABLE II

	Excellent	Good	Failure	Unknown
Acute pyogenic	23	3	6	11
Low Grade	3	3	2	1
Traumatic	1	3	0	1

"Excellent" signifies a joint in which there is satisfactory endurance, practically no limp, or a very slight one, with motion varying from 160° to 90° flexion, and other movements in the same proportion. Muscle power in *nine* cases was not commensurate with the extent of motion, but was sufficient for all practical purposes. For example, a patient may be able to flex the hip only to 110° against gravity, while passively the hip may be flexed to 60° . The Trendelenburg sign in these patients is positive. In *thirteen* cases active motion can be carried out to the limit of the range of motion secured. In these the Trendelenburg sign is usually negative.

"Good" signifies a satisfactory range of motion, but a definite limp and deficient muscle power, which is apparently due to unsatisfactory relations between the head of the femur and the acetabulum; usually the head is too small. Muscle power is sufficient for ordinary walking, but motion against gravity, or when under strain, is often ac-

cessive walking is experienced. However, there is a satisfactory degree of endurance, and all patients in the group expressed themselves as well pleased with their condition as compared to their former state in which there was firm ankylosis. The Trendelenburg sign in these is decidedly positive.

In *five* cases failure was due to the recurrence of ankylosis, but normal anatomical position of the hip was restored and better functional use of the extremity as a whole secured. In *two* cases there was extensive absorption of the head and neck of the femur so as to cause a painful and unstable hip, but in no case did actual dislocation occur. In one of these a good result was secured after a second operation to change the angle of the superior wall of the acetabulum from an incline to a horizontal plane. One patient died a year after operation from miliary tuberculosis, after relighting a latent tuberculous infection of the joint. As a definite history was not obtainable and the roentgenogram did not resemble tuberculosis, the operation was undertaken without knowledge of the actual pathology present. Also, at operation, there was no gross evidence of this disease. In one case in which ankylosis surrounded the joint, the sciatic nerve was injured during the operation, resulting in persistent foot drop and loss of sensation to the leg. The

TABLE III

No.	Name	Age Op.	Sex	Year Op.	Walking		Long Dist.	Pain	Stabil- ity	Support	Comp. Prev. State	Occupation
					Down stairs	Up stairs						
1	J. W. B.	23	M	1916	Ex	Ex	Ex	None	Ex	None	Ex	Auto slsm.
2	E. B. B.	33	F	1918	Ex	Ex	Ex	None	Ex	None	Ex	?
3	A. B.	26	F	1921	Ex	Ex	Ex	Sl	Ex	None	Ex	H. W.
4	E. P.	18	F	1922	Ex	Ex	Ex	Sl	Ex	None	Ex	None
5	W. C. W.	30	M	1923	Sl	Sl	Sl	Sl	Good	Cane	Good	?
6	G. P.	29	F	1923	Ex	Ex	Ex	None	Ex	None	Ex	H. W.
7	H. R. R.	30	M	1923	Ex	Ex	Ex	None	Ex	None	Ex	Squire
8	G. K.	22	F	1924	Ex	Ex	Ex	None	Ex	None	Ex	H. W.
9	O. D.	19	F	1924	Ex	Ex	Sl	Occ	Good	None	Good	H. W.
10	L. B.	30	F	1926	Ex	Ex	Ex	None	Ex	Cane	Ex	H. W.
11	A. S.	33	M	1926	Sl	Ex	Sl	Occ	Good	Cane	Good	Cook
12	I. W.	19	F	1926	Ex	Ex	Ex	None	Ex	None	Ex	No
13	E. L.	26	F	1926	Ex	Ex	Ex	None	Ex	None	Ex	?
14	B. S.	45	M	1926	Sl	Ex	Ex	None	Good	None	Ex	Supt.
15	E. K.	24	F	1927	Sl	Ex	Ex	None	Ex	None	Ex	Steno.
16	W. W. R.	40	M	1927	Sl	Sl	Sl	Sl	Good	Cane	Good	Brakeman
17	L. S.	35	F	1927	Ex	Ex	Ex	None	Ex	None	Ex	?
18	A. G. H.	44	M	1928	Ex	Ex	Ex	Occ	Ex	None	Ex	Druggist
19	W. V. V.	44	F	1928	Ex	Ex	Ex	None	Ex	None	Ex	H. W.
20	A. L. A.	24	F	1928	Ex	Ex	Ex	None	Ex	None	Ex	H. W.
21	V. C.	26	F	1929	Ex	Ex	Ex	None	Ex	None	Ex	
22	R. W.	18	F	1929	Ex	Sl	Sl	None	Ex	None	Ex	Weaver
23	R. E. L.	38	M	1929	Ex	Ex	Ex	None	Ex	None	Ex	Grocer
24	L. J.	28	F	1929	Ex	Sl	Sl	Occ	Ex	None	Ex	H. W.
25	G. G. A.	32	F	1929	Ex	Ex	Sl	Occ	Ex	None	Ex	H. W.
26	C. H.	29	F	1930	Sl	Ex	Ex	Occ	Lax	Cane	Ex	Steno.
27	H. B. O.	27	F	1930	Ex	Ex	Ex	Sl	Ex	Cane	Ex	H. W.
28	T. R.	20	M	1930	Sl	Sl	Sl	Sl	Good	None	Good	Farmer
29	R. H.	29	F	1930	Ex	Ex	Sl	Occ	None	None	Ex	H. W.
30	E. G. P.	35	F	1931	Sl	Sl	Sl	None	Ex	Cane	Ex	H. W.
31	C. E. J.	46	M	1931	Ex	Ex	Ex	None	Good	Cane	Good	B'smith
32	M. H.	40	F	1931	Ex	Ex	Ex	None	Lax	None	Ex	None
33	J. B. M.	25	F	1931	Ex	Ex	Ex	None	Ex	None	Ex	H. W.
34	F. M. L.	29	F	1931	Ex	Ex	Ex	None	Ex	None	Ex	H. W.
35	R. S. C.	35	M	1931	Ex	Sl	Sl	Sl	Ex	Cane	Good	Machinist
36	J. E. I.	62	F	1932	Sl	Ex	Sl	Occ	Good	None	Good	?

patient had excellent function in the hip, so that this case should not be classed as a failure, but rather as a complication. Reports of these two cases have been published previously.

The problem, as I have repeatedly stated, is not one of securing more motion, but a joint with endurance which will stand without inconvenience the ordinary strain of daily life. In consequence, an analysis of a

number with satisfactory functions ranging from two to seventeen years after operation is most valuable in determining the practical results secured. A similar analysis of arthroplasty of the knee was made in 1925, and the same scheme has been employed in the accompanying tabulation after arthroplasty of the hip.

Of the thirty-six cases tabulated there were six in which ten to seventeen years have elapsed since operation; of these, not one uses any form of support. In eleven cases, five to nine years have elapsed and only one uses a cane. In nine cases, three to four years have elapsed and two use a cane. In five cases, two years have elapsed and two use a cane. Not one uses any form of support except for walking long distances. It is also apparent that the longer the period of time, the stronger the joint and the less the need for using any form of support. From the table it is also apparent that the longer the period after operation, the less the pain and disability.

Of the forty-four cases in which end results can be estimated, there were twenty-seven excellent results, or approximately 60 per cent; nine good, or approximately 22 per cent. Therefore, 82 per cent may be classed as satisfactory. There are eight who pursue rather strenuous occupations which require constant standing or walking, as follows: salesman, superintendent of saw-mill, brakeman, druggist, grocer, farmer, blacksmith and machinist. The remainder do not pursue especially strenuous vocations, but are apparently capable and efficient. However, as I have often stated, procedure is not offered in those with laborious occupations unless the individual is capable of rehabilitation, nor with those in whom compensation is pending. There are thirty-six women and twenty-one men, which indicates that a stiff hip is by far more embarrassing to women than to men. The problem of childbirth and sexual relations must also be considered in women.

The roentgenograms made in those with favorable results after the lapse of many years indicate that the process of restoration of permanent articular contour is accomplished within a period of two years, but after this time there may be some increase in condensation of the articular surfaces, but no material change in the contour. In a large percentage there was slight loss of

osseous structure in the surface of the head of the femur within the first year, but no change in the acetabulum in any case. In four cases there was a sequestration with gross changes that materially affected the end result. In the thirty-three cases there was no apparent change after the lapse of many years. The problem is purely one of circulation to the head of the femur, which is also apparent after fracture of the neck of the femur and traumatic dislocation of the hip, the main blood supply to the head being from the vessels which enter the head from the pelvic bones after ankylosis or from the ligamentum teres, which obviously must be severed by operation. In recent years, with greater care not to strip the soft parts from the neck, there has been much less change in those in which a new head could be constructed in normal cancellous bone; but in those in which the head of the bone is exceedingly dense, as in "Coxa Malum," the probability of sequestration is possibly greater. The circulation is impaired in this type of bone, not alone in the hip but elsewhere, as often illustrated in decreased resistance in ununited fractures and after autogenous bone transplants into bone of this type.

Bilateral Ankylosis of the Hip.—The problem is quite different when the ankylosis is bilateral or diffuse, involving a majority of the articulations. This condition has recently been considered in detail in an address before the Pan-American Medical Association, which will be published later, therefore only a brief review will be given.

The etiological factors causing bilateral ankylosis of the hip are acute pyogenic infection and low-grade progressive polyarticular arthritis, atrophic or rheumatoid arthritis. There were seventy arthroplasties in thirty-seven cases, in five of which the ankylosis was diffuse involving many joints of both the upper and lower extremities, and usually the spine. In these five cases, all operations upon the hips were failures, and it is questionable whether it is possible to restore a new joint when the weakness of the muscles and ankylosis of other joints renders the individual incapable of carrying out the necessary exercises to secure the natural process of functional adaptation. And also it is difficult and often impossible to keep up the morale of the patient through a long series of operative procedures. Arthroplasties upon the elbows and jaws were

quite successful and gave great comfort to the patient. These five cases are therefore excluded, leaving thirty-two cases in which there were sixty-two arthroplasties. Of the thirty-two cases there were fifteen cases as a result of acute pyogenic infection, and seventeen cases as a result of progressive polyarticular arthritis, the so-called ankylosing type. In ten of these due to acute pyogenic infection the spine was ankylosed, and in all of those due to progressive polyarticular arthritis. This obviously makes it impossible to secure the compensatory movement in the propelling force of the spine, and renders the restoration of normal gait impossible.

In those due to acute pyogenic infection there is no question as to indication if the process has entirely subsided, but there is always a possibility of relighting a latent infection. In those as a result of progressive arthritis, no operations are indicated until the process is sub-acute, dormant or arrested. Surely every method of treatment, as removal of foci of infection, must have failed to completely arrest the disease before surgery should be considered. Also the operations on both hips must be carried out before there has become involvement of practically every joint in the body.

Of the fifteen cases with bilateral ankylosis due to pyogenic infection, both hips were operated upon in six and only one hip in three. Of these in only one case were we able to secure appreciable function in both hips ranging from 30° to 90° . In three cases function was secured in one hip, 30° , 60° , 20° respectively. There were two deaths as a result of an acute streptococcus infection relighted twenty-four hours after the operation. The danger of a recurrence of such an infection after any operation, in those with extensive involvement of bone, is too well known for further comment.

In one case in which both hips were successfully mobilized, aged twenty years, the patient had an ankylosed knee in which arthroplasty was also successful, with a range of about 40° motion. This was the only case in which arthroplasty was successful in three joints of the lower extremity. In one of the hips ankylosis recurred, requiring a second arthroplasty, making a total of four operations on this one individual, but the result warranted the operative risk and prolonged confinement.

Of the seventeen cases with progressive polyarticular arthritis there were seven in which the condition of the patient was materially benefited so as to render walking possible to a practical degree. In five cases only one hip was successfully mobilized with range of motion from 30° to 40° , and in two cases both hips were mobilized with motion from 30° to 40° . Although two to four years have passed since operation, we must remember that this is such an insidious process that there is the possibility of recurrence, and more time must elapse before evaluation of the operation in this type of case can be made. However, it is apparent that the return to active life is one of the most effective measures in arresting any low-grade or chronic progressive process.

There were twenty-nine arthroplasties in fifteen cases resulting from acute pyogenic infection, with five successful and twenty-four failures. This makes only 20 per cent success, but 33 per cent of the patients were materially benefited. In those with progressive polyarticular arthritis there were thirty-three arthroplasties in seventeen cases, with seven successful, twenty-six failures, 27 per cent operative success, but 41 per cent of patients improved. Of the entire group of thirty-two patients there were twelve cases of 37 per cent good results, which materially improved the condition of the patient and permitted a return to more active life. As there have been much better results in recent years it is believed that with improved technique in the complicated after-treatment, a further increase in good results will be secured.

The conditions of unilateral and bilateral ankylosis of the hip joint are entirely different. In bilateral ankylosis of the pyogenic type there has usually been a more intense infection than when only one hip is involved, with more extensive invasion of bone and more fibrosis of the soft parts, and a natural tendency to recurrence by re-formation of scar tissue. In those with progressive polyarticular arthritis the process is usually more or less active, with the possibility of further invasion of the operated area. Also the necessary functional use of the joint is far more difficult to carry out than when there is one normal hip. This is not a very favorable report for the average operative procedure unless one realizes the serious disabilities of the afflicted patients; however, when one considers the

marked improvement in satisfactory results from arthroplasty in monarticular affections, it is possible that with further experience better results may be secured in patients with bilateral ankylosis.

In conclusion I desire to emphasize:

1. The physiology of the upper extremity of the femur must be duly regarded, at the time of operation and thereafter. The circulation to the head of the bone must be considered of prime importance, and the bone structure must be protected from excessive weight-bearing until the internal structure of the bone has been sufficiently restored.

2. Although there have been a small number of successful cases in those with laborious occupations, the procedure should not be advised unless the individual is able to undergo rehabilitation if necessary. Also the procedure has not and should not be advised as long as compensation is pending.

3. There has been marked improvement

in the percentage of end results in monarticular ankylosis with increased experience. The problem is no longer one of motion, but one of function, as recurrence of ankylosis has been exceedingly rare in recent years.

4. The end results in bilateral ankylosis are apparently not encouraging, but when the gravity of the condition is considered the procedure is worthy of trial. In the future much consideration should be given to the intricate problem in this class of patients.

5. The new joint restored is not a normal one, but nature's method of repair, which is a question of functional adaptation of the parts that can be accomplished only by active use, which depends entirely on two factors: the mechanical construction of the joint, with due regard to physiology, and the coöperation of the patient in re-establishing actual function and not mere motion.

THYROID SURGERY IN SOUTHERN MICHIGAN AS AFFECTED BY THE GENERALIZED USE OF IODIZED SALT

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To the mariner geography means one thing—routes, safe channels, harbors; to the weather forecaster it means areas of high and low barometric pressure; to the pioneer it means mountain ranges, valleys and trails. To the medical scientist the map has been divided into areas of endemic diseases. It is the medical map that has been most subject to change in this last generation, a change made possible by the increasing knowledge of the fundamentals of the causes of endemic diseases or the manner in which they are spread, and this knowledge has led to ways of prevention.

The medical geographer has been busy changing his colors where yellow fever, malaria and typhoid fever prevailed. On the medical map our textbooks charted the Great Lakes area as an endemic goiter region, not the only such region but the one that interests us the most today. It would appear that this map is due for another change. Baumann thirty-seven years ago

discovered the constant presence of iodine in the normal thyroid gland. Later workers noticed that in areas of endemic goiter there was a deficiency in the iodine content of the food of that area. By making up this deficiency in the diet endemic goiter is on the way to oblivion and there is a question now as to whether the surgical forms—adenoma and perhaps hyperplasia of the thyroid—are not far less apt to occur when simple goiter is not first present. So again the altruistic M.D. cuts off some more of his nose and makes his own existence more precarious and difficult.

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A trained observer from Dr. William S. Halsted's clinic at Johns Hopkins, where there was always a large number of goiter patients, was impressed on coming to Detroit in the winter of 1915-16 by the number of goiters seen on the streets. Almost every other woman on the street cars seemed to have some enlargement of the neck. Today the picture is very different even to the casual observer.

Seaweed and the ash of sea sponge had been used by the ancient Chinese, the Greeks and the South American Indians in the treatment of goiter. Courtois of France in 1812 first discovered the element iodine. It soon followed that the iodine of the seaweed and sponge was the active principle in them effective in the treatment of goiter. About 1840 iodized salt was used as a prophylactic measure against goiter in Switzerland. Breuer in Nothnagel's clinic in 1900 first described iodine hyperthyroidism (Jod-Basedow). He advised against the use of iodine in the treatment of goiter. Dr. Theodore Kocher in Berne in papers published in 1904, 1910 and 1911 concluded that iodine was distinctly very harmful in adenomatous and hyperplastic goiters. Kocher was the leading goiter student of his day and his opinion had great weight and his influence extended to this country through his American students—especially through Halsted, who spent much time with him and shared his views. So strong was this feeling that I feel reasonably sure that if I, as his resident surgeon, had used iodine in the preparation of one of his patients for operation I would have been in imminent danger of dismissal. However, Halsted was greatly interested in the work of Marine, a former student of his, when he began the study of goiter and its relation to iodine.

It was this work of Marine and his associates, begun in 1907, which marked the newer and more practical knowledge of the role of iodine in thyroid metabolism. They again turned the spotlight of professional interest on the use of iodine as a prophylactic measure against endemic goiter.

Plummer deserves the credit for turning our attention to the use of iodine in the preparation of sick goiter patients for operation. He had fortunately a new measuring rod (the basal metabolic rate) which helped tremendously in gaging the activity of the thyroid. It aided in showing the rate of improvement in the sick hyperthyroid pa-

tient on the administration of iodine and also it showed when that improvement became stationary. This is the time that the patient is in the optimum condition for operation. Had Breuer, Nothnagel, Kocher, Halsted had this indicator it is possible their attitude toward iodine would have been different.

MICHIGAN EXPERIENCE

Surveys of the school children in different countries have shown the goiter incidence as high as fifty per cent. Fifty per cent of the high school students in Grand Rapids had thyroid enlargement in 1923 as shown by the survey directed by Dr. C. C. Slemmons. This was probably the approximately correct percentage for the state.

In 1924 iodized salt was introduced to the population of Michigan through the fine efforts of the Pediatric section of the Michigan State Medical Society (with Dr. D. M. Cowie as Chairman of the Committee), Dr. C. C. Slemmons and the State Board of Health. The committee had the approval of the State Medical Society and were aided by Dr. O. P. Kimball, a former associate of Marine. The work of this committee was accomplished through meetings with the salt manufacturers, who coöperated splendidly in placing iodized salt on sale in the grocery stores throughout the state. Wide publicity was obtained for the new salt through letters from the State Board of Health to school children, parents and organizations.

In the clinic of the Henry Ford Hospital for a good number of years prior to this we had been treating non-toxic diffuse goiter* (simple colloid) in children with sodium iodide with such good results that we were easily sold on the probable efficacy of iodized salt distributed through the grocery stores.

Iodized salt in Michigan contains .01 per cent of sodium iodide. The Committee recommended that the use of this salt should preclude the use of any other form of iodine by the population and to be effective must be used for cooking as well as table use. The salt producers estimated that each person in Michigan consumed about five or six

*The American Association for the Study of Goiter recommends the following new goiter nomenclature:

Type 1—Non-toxic Diffuse Goiter
Type 2—Toxic Diffuse Goiter
Type 3—Non-toxic Nodular Goiter
Type 4—Toxic Nodular Goiter

pounds of salt per year, whereas other estimates placed it up as high as eight pounds per year. The Committee took the eight pounds per year as the safe average. With

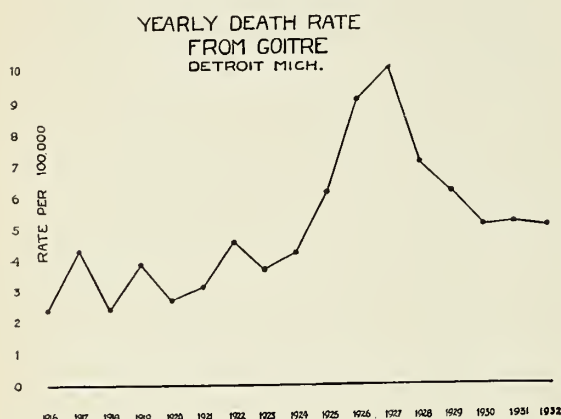


Fig. 1. Courtesy Detroit Board of Health.

the above average of sodium iodide, *i.e.*, .01 per cent, this would give the average consumer about one milligram per day.

The most recent figures³ show the iodine content of the human thyroid ranging from 2.4 to 23.7 mg. with an average of 8 mg.

The diseased glands are much poorer in iodine content, or should it be said that when the iodine content is very low the gland is diseased?

As two or three milligrams of sodium iodide per week will prevent goiter and ten milligrams has been proved to do no harm it is seen that the average percentage in Michigan salt is well within safe limits.[†]

In a paper in 1927² we told of our experience which seemed to suggest that the iodized salt might be responsible for the increase in the number of nodular (adenomatous) goiters coming to operation. Our curve seemed to suggest that. The death rate from goiter in Detroit (Fig. 1) seemed also to bear this out. At that time then we had some misgivings as to the possible dire results from the generalized use of iodized salt, in view of these two curves and the previous reports of such fine men as Breuer, Nothnagel, Kocher and Halsted, several decades previous to our experience.

[†]The latest work by Orr and Leitch states the minimum iodine requirement per day to be about 45 gammas for an adult and 150 gammas for a child. A gamma is 0.000001 gm. A grain is 0.064 gm. or 64,000 gammas. See Editorial J. A. M. A., 101:606, Aug. 19, 1933.

Hartsock, Plummer, Goetsch, Jackson and many others, I believe, were all somewhat skeptical of the use of iodine as an article of diet in the manner under discussion.

Hartsock in May, 1926,¹ from the Crile Clinic reported 16 cases of iodine hyperthyroidism which they felt were due to the use of iodine salt though this salt was sold in such minimal quantities in Ohio due to the opposition of the medical profession.

In a letter to me of August 28, 1932, Dr. Hartsock states, "No one at the present time sees cases which are very suspicious of this condition (iodine hyperthyroidism). The explanation I do not know, and I am very much confused in my own mind about the whole thing." In a second letter, dated August 31, 1933, he writes, "At the present time we doubt very much if we see any cases that are of this nature, *i.e.*, iodine hyperthyroidism."

Cowie of Ann Arbor reports to me in a letter the investigation of several cases of hyperthyroidism supposed to have been induced by the use of iodized salt, "We have run down several reports of ill effects from the use of iodized salt, but in each instance we have found that the reports were fallacious."

Our old ingrained prejudice against iodine was too apt to lead us to conclude that any one taking iodine and developing signs of hyperthyroidism did so because of the iodine. This may not be true. It is a fact that in the Johns Hopkins Luetic Clinic in a series of 6,000 patients (some taking as high as 120 grains of iodides daily for twelve months) not a single case developed hyperthyroidism. In the Henry Ford Hospital with over 3,000 luetic cases under treatment with iodides Dr. Frank Menagh tells me that only one or perhaps two cases have come under suspicion of developing hyperthyroidism with even larger doses of iodides.

This lack of hyperthyroidism development in luetic clinics after huge doses of iodides outside of and in goiter areas raises in my mind considerable doubt as to the existence of iodine hyperthyroidism (Jod-Basedow of Breuer). Certainly no iodine hyperthyroidism should be feared judging from the report of the work of Dr. C. C. Slemons and the Michigan State Board of Health. "We have known for many years

that large, long standing, tumorous goiters in adults occasionally become toxic, and we have been trying to establish the point whether or not some of these cases will become toxic by the use of iodine salt. Of the seven hundred cases we have studied in Western Michigan approximately three-fourths of the cases have used iodine salt continuously since the summer of 1924. Among these we do find an occasional toxic goiter and to be accurate three per cent have developed toxic goiters since they started to use iodine salt. Among those who have not used iodine salt or any other form of iodine 45 per cent have become toxic within the past three years. So summing it all up, we find just fifteen times as many toxic goiters among those not using any form of iodine as we do among those who are using iodine salt."

EXTENT OF USE OF IODIZED SALT IN MICHIGAN

A letter from the largest salt distributor in Michigan (September 1, 1931) states that "in 1924 we shipped 45,079 cases of plain table salt to the State of Michigan. In 1930 58,643 cases of iodized salt and 7,057 cases of plain table salt." Letters from the other large distributing salt companies showed the same ratio of about 8 of iodized to 1 of plain salt.

A letter just received from a large salt company shows the following figures for the last three years of their sales in Michigan.

	Iodized	Plain Free Running
1930	84.8%	15.2%
1931	87.4%	12.6%
1932	94.8%	5.2%

For a few years after the publicity in this matter our patients knew if they were using or were not using iodized salt. Today without the publicity the patient does not know, as a rule, whether he is or is not using iodized salt.

Perhaps the lack of publicity too will result in a decreasing use of this salt. Last week a large chain store reported that they are selling only five iodized salt to one plain.

RESULTS OF THE USE OF IODIZED SALT

The tremendous reduction in the occurrence of enlarged thyroids (non-toxic dif-

fuse goiter) in the school children of Michigan since 1925 is now well known. In Detroit the rate has dropped from over 35 per cent to 1.4 per cent (Fig. 3).

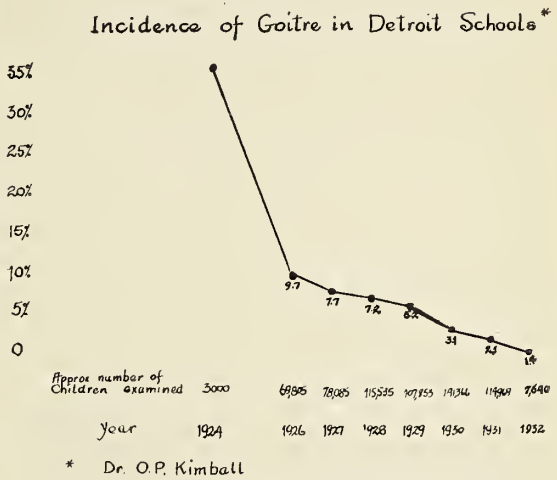


Fig. 2. Courtesy Detroit Board of Health.

All other surveys now show the same decrease approximately. Since in Detroit there is still 1.4 per cent occurrence there are four factors to be considered in trying to arrive at the reason for this. (1) The individual may not be using iodized salt, i.e., he is still having an abnormally low intake of iodine. (2) There may be some physiologic interference with the absorption or the utilization even if the amount of iodine taken is adequate. (3) The individual may use up more iodine than the average so would require more. (4) May non-toxic diffuse goiter be caused by other factors than the lack of iodine? Chesney and now Marine have produced goiter in animals with a diet of cabbage but can prevent the development of the goiter on the same diet with the prophylactic use of iodine.

Today the question has been asked as to whether hypothyroidism has increased in Michigan since the use of iodized salt. We have no evidence in one way or the other with which to answer this question but I should be inclined to answer it in the negative.

TOXIC DIFFUSE AND NODULAR GOITER

In 1927, two years after the salt was in wide use, the numbers of patients with toxic diffuse and nodular goiter began to decline

steadily after an initial rise. Our chart shows this most decidedly.

Previous to 1925 our curve of total operations and thyroid operations was

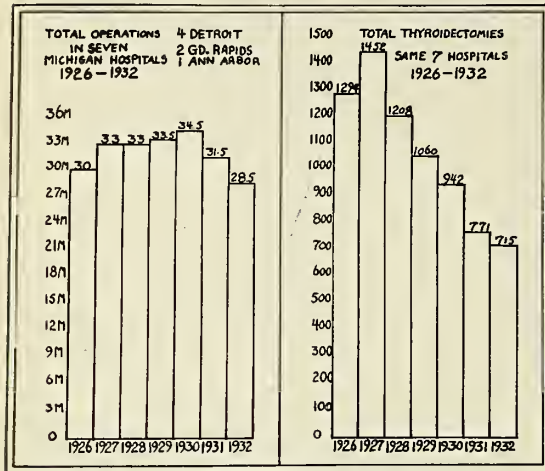


Fig. 3. Compilation from seven hospitals.

(Harper, Grace, Henry Ford and Receiving Hospitals, Detroit; Blodgett Memorial and Butterworth Hospital, Grand Rapids; University Hospital, Ann Arbor.)

rapidly rising. This was accounted for by the increased number of beds for patients available after the War and the rapid increase in the population in Detroit.

Through the courtesy of the surgeons of the large hospitals in Southern Michigan we have the curves charted for seven of the largest hospitals in Detroit, Ann Arbor and Grand Rapids. This shows the same marked decrease in the number of thyroid operations following the introduction of iodized salt. Since the Fall of 1929 there has been a great drop in the total number of all operations in the private and semi-private patient hospitals.

This is partially compensated for by this composite chart showing the total numbers

of operations in the seven hospitals compared to the total number of thyroid operations. While the total number of operations during the period of tremendous economic depression has dropped approximately 10 per cent the number of thyroid operations has dropped 50 per cent.

These striking figures over so large an area showing the marked decrease in nodular and toxic diffuse and toxic nodular goiter justify the theory at least that a population freed from the endemic type (non-toxic diffuse goiter) is much less subject to nodular, toxic nodular and toxic diffuse goiter.

CONCLUSIONS

1. The general use of iodized salt has practically stopped endemic goiter in Southern Michigan.

2. Without the presence of endemic goiter nodular and toxic nodular and toxic diffuse goiter operations have been reduced 50 per cent.

(Figures from the large charity hospitals counteract the argument that these patients may not be coming on account of the present great financial depression.)

3. Not a single case has been found pointing to any injurious effect from the iodized salt. (It is an academic question as to whether an existing nodular goiter may be made toxic by the use of iodine.)

REFERENCES

1. Hartsock, C. L.: Iodized salt in the prevention of goiter: Is it a safe measure for general use? *J. A. M. A.*, 86:1334-1338 (May 1), 1926.
2. McClure, R. D.: Experiences with the thyroid problem in a Detroit clinic. *Ann. Surg.*, 85:333-338 (March), 1927.
3. White House Conference on Child Health and Protection: Part III, Nutrition. New York Century Company, 1932.

TRANSMISSION OF COMMON COLDS BY FOOD

The possibility that common colds may be spread by fomites has been suggested by epidemiologists, but convincing experimental proof has not been available. The recent demonstration by Bliss and Long of Johns Hopkins University that contaminated food may transmit this disease to chimpanzees, therefore, is significant. Fifteen apes were kept for three months under scrupulous quarantine conditions. All attendants were examined daily for infections of the upper respiratory tract and remained healthy throughout the experiments. The attendants wore masks and gowns and took full aseptic precautions

in preparing food and taking care of the animals. During this preliminary period the fifteen apes remained free from infections of the upper respiratory tract. At the end of the period a person suffering from a common cold was allowed to prepare food for the animals. After the food was placed in aseptic containers by this person, he left the kitchen. The attendant then entered, carried the containers to the quarantine rooms, and placed them in the individual chimpanzee cages. Within forty-eight hours after the first meal, five of the apes developed typical symptoms of infection, such as nasal discharge, nasal obstruction, mouth breathing, slight fever and leukocytosis. Two developed a moderately severe cough.—*Journal A. M. A.*

SURGERY IN THE DIABETIC PATIENT*

C. FREMONT VALE, M.D.†

DETROIT, MICHIGAN

Surgical interference in the diabetic patient naturally falls into two distinct groups:

A. Essential, in most clinics by far the larger group, including cases in which surgical complications arise demanding treatment usually as a life-saving measure. Gangrene is, of course, the outstanding example.

B. Elective, including conditions which only surgery can correct, but which have little or no bearing on the progress of the diabetes. Hernia or uncomplicated fibroid of the uterus are examples. We are not now particularly concerned with this group, except to note in passing that its scope has been tremendously broadened by the increased metabolic control made possible by insulin, so that the average case of diabetes need not now be denied such corrective or curative operation because of his basic condition.

The essential group has also greatly increased due to insulin, first, because diabetic persons may now in larger percentage live on to get surgical complications, and, second, because the field is greatly widened in which relatively safe operation may be undertaken in these unfortunate people.

McKittrick and Root² give the increase to over 30 per cent and suggest that it may later reach 50 per cent. Our own figures for 1932 were ninety-two out of 310 admitted, or 29.7 per cent, and for five months this year forty-one out of 143 admitted, or 28.6 per cent.

Because the diabetic patient has a fundamentally altered metabolism his reaction is different from the non-diabetic patient as to infection, circulation, diet, anesthesia, shock measures, etc. For these reasons it has become necessary for the surgeon who takes care of surgical complications in diabetic patients to have a more intimate knowledge of this disease and the unusual conditions governing their proper care. And in no other condition is it so necessary to have such close coöperation between internist and surgeon.

It is not my intention to go into detail concerning the medical aspect of diabetes, but as a basis for the intelligent approach to surgical treatment of these cases it is necessary to know certain things.

The most widely accepted but yet un-

proven theory is that in diabetes there is an insufficiency of insulin supplied by the islands of Langerhans in the pancreas, with the result that not enough glucose is burned.



Fig. 1. Moist infective gangrene evidently started by pressure on heel. (See chart, Fig. 2.)

It collects in excessive amount in the blood and tissues, producing a high blood sugar, and variable amounts of glucose spill over in the urine. The storage depots of glycogen, notably the liver and muscles, are depleted of their supply. When not enough sugar is burned in proportion to fat and protein, ketone bodies (B-oxy butyric acid, diacetic acid and acetone) appear in the urine, the CO_2 combining power of the blood falls, and we have acidosis. If this is unchecked coma ordinarily follows. To control such a patient the diet is regulated and insulin given to the end that carbohydrate, fat and protein shall be burned in proper ratio, the strength maintained and glycogen storehouses refilled. When this is done the blood sugar drops, sugar and ketone bodies disappear from the urine, and the patient is said to be controlled.

*Read before the surgical section of Michigan State Medical Society, Grand Rapids, September 14, 1933.

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This much at least the mere surgeon must know because his patient must be under the best possible control at the time of operation if the rule of safety is to be followed.

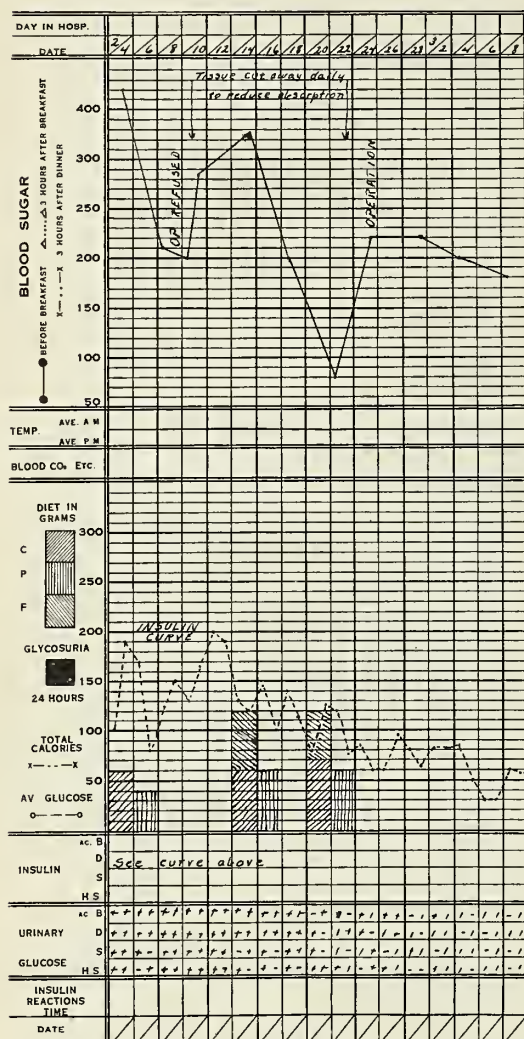


Fig. 2. Composite chart of patient whose leg is shown in Figure 1. Note difficulty in obtaining and maintaining control. Insulin up to 200 units per day.

Most of these cases are only fair risks at best. To operate on a diabetic without intelligent effort to control his metabolism first is with rare exception a questionable procedure.

It follows that any condition which regularly disturbs metabolism will be of definitely greater importance in the diabetic, e.g., fever, infection, toxemia, hyperthyroidism, etc. Any of these may make satisfactory control difficult or impossible to obtain or maintain (Fig. 2).

In January of 1929 through the interest of Dr. Richard McKean a department was set up in Receiving Hospital in Detroit for the careful study and treatment of diabetic cases. I think it is only proper to say that through his efforts a new day has dawned for these unfortunate patients. It has been my privilege to attend the surgical cases since that time. There have been approximately 800 cases admitted, about 200, or 25 per cent, of which have required surgery. For economic reasons very few elective operations have been done.

Both medical and surgical cases are admitted to the diabetic section and remain there throughout their hospital treatment. They are always primarily medical cases. Any surgery necessary is looked upon as a more or less important incident in the whole course of treatment needed. Operative interference is undertaken only after careful consultation and definite agreement between internist and surgeon upon the severity of the diabetic condition, the effect the surgical complication is having upon the patient, the nature and extent of operation proposed, the kind of anesthetic to be used, and finally, and of great importance, the exact time it is to be done.

Preoperative Treatment.—Let us take a case for example. A woman enters the hospital with a gangrenous infected foot (Fig. 1), running a low fever, 4 plus sugar in the urine, and having a blood sugar of 420 mg. per 100 c.c. with a CO_2 combining power of 35. It is obvious she cannot recover without the removal of the leg. However, to proceed in the face of such a turmoil in her metabolism would be fatal. She is put on a low calorie diet, 400 to 600, relatively high carbohydrate, usually 60 grams, low protein, about 40, and no fat. This diet is divided into five equal feedings three hours apart. Fifty units or more of insulin are given at once and the following orders written:

Test urine with Benedict's Solution every three hours: Give insulin as follows—

If orange.....20 units
If red.....15 units
If yellow.....10 units
If green.....5 units
If blue.....none

Twenty-four hours will almost certainly see the patient greatly improved, when, if there is no appreciable change in the con-

dition of the foot, operation will be delayed another day or two. This time is used to build up glycogen stores and determine the insulin requirements more accurately. Her

three hours later. There is no preoperative fasting except where absolutely necessary. Fluids are kept up. Three hours before going to the operating room 150 c.c. of



Fig. 3. Dry arteriosclerotic type of gangrene in a mild diabetic condition. The fourth toe has amputated itself.

blood sugar should by this time be well under 250, the upper limit of relative safety. A blood culture is taken even though there is no clinical evidence of blood stream infection, because the diabetic is particularly prone to develop septicemia. This is often apparent only after amputation, and it is at least comforting to know if the culture was positive before, which it often is.

The day and hour of amputation is then agreed upon. Here the internist has the greater responsibility. He is best able to judge the degree of control, and for how long we may safely expect it to be maintained. It may be very transient (Fig. 2). The operation is done on schedule unless the blood sugar that morning is above 250. Here 9 A. M. means 9 A. M. The patient is prepared for that hour and not two or

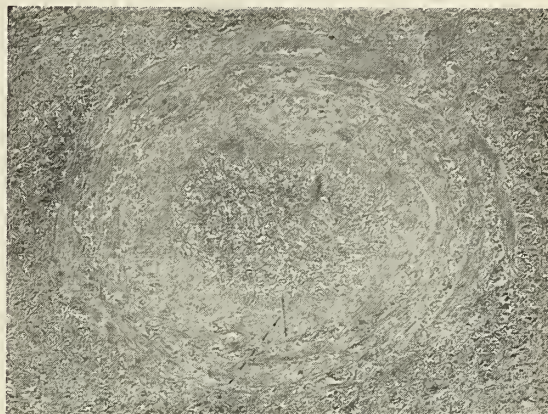


Fig. 4. Section of posterior tibial artery in diabetic gangrene. The lumen is filled with thrombus, but the marked intimal thickening is well shown.

orange juice partially covered with insulin are given. Morphine is not given as a rule. It to some extent inhibits the effect of insulin, but more important is the nausea and vomiting produced in some patients, with its tendency to acidosis. Then, too, most of these cases are not fearful or nervous and need little sedation. The prophylactic barbitol preparation for spinal is quite sufficient.

Anesthetics.—The type of anesthesia to be used must be intelligently chosen for each case individually. While a local anesthetic may be wisely selected for many conditions, I believe it is absolutely contra-indicated where the surgical lesion is based on circulatory impairment, as in gangrene of a toe. Failure of healing with extension of infection or gangrene is much more apt to occur because of reduction of tissue resistance and circulation by the injected solution. One is often tempted to use it because of the complete absence of systemic effect.

Nitrous oxide is satisfactory only for very short anesthetics. When prolonged the CO₂ combining power of the blood begins to fall. Ethylene is much preferable where available.

Ether, of course, produces an acidosis even in the nondiabetic. The diabetic operated upon under this anesthetic will develop acidosis, the degree of which will depend upon the severity of his diabetes and

the amount of ether administered. The frequent post-ether nausea and vomiting further upsets the attempt to maintain diabetic control. Its use is justified only in rare cases.

possibly take it after returning from the operating room, certainly within three hours. Orange juice usually supplies this need satisfactorily. If no food can be taken by

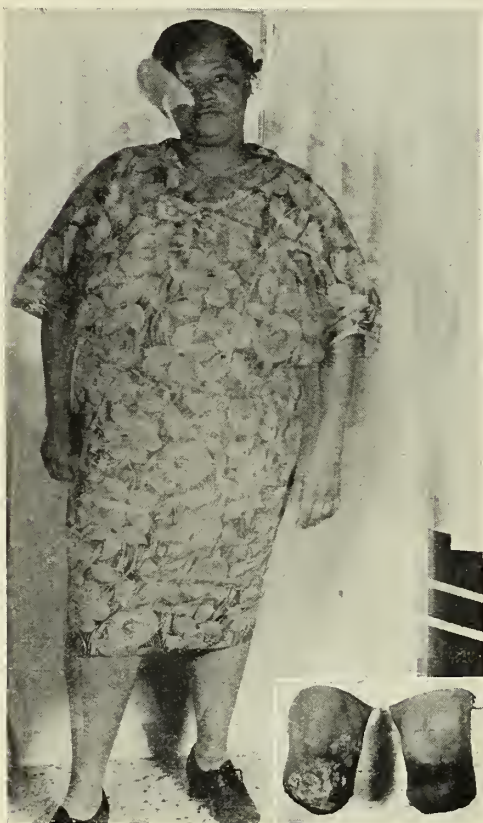


Fig. 5. Youngest patient in series of cases. At age twenty-nine, amputation left leg; at age thirty, amputation right leg, both typical diabetic gangrene. Insert shows stumps three years later on which the patient walks well with artificial limbs.

The duration of any inhalation anesthetic should be reduced to a minimum.

We use novocain subdural block, or spinal anesthesia, in the vast majority of cases; 50 to 75 mg. is usually sufficient for even a mid-thigh amputation. With this amount the blood pressure does not drop much. This is particularly important as most elderly diabetic patients do not have much cardiac reserve. There is little effect on the metabolism, it almost completely eliminates shock, and it has the added advantage of allowing free administration of fluid by mouth.

Postoperative Treatment in General.—The diabetic patient should have food, especially carbohydrate, as soon as he can



Fig. 6. Result of mid-thigh amputation fifteen days after operation. Note scar beginning to draw posteriorly.

mouth, glucose intravenously and saline by hypodermoclysis should be given. The absorption of glucose by the rectum is still a moot question. Certainly it cannot be depended upon to furnish any definite amount in a given time and we never use it. Many cases are able to continue their regular pre-operative diet within a few hours, and of course this is highly desirable.

Insulin orders are written as previously described. Wide variations in insulin needs are to be expected. Removal of a source of infection will reduce it rapidly. The most common as well as the most serious complication in this connection is insulin shock or hypoglycemia. Thin or emaciated patients are the more susceptible. A restless person may use his muscles a great deal in the course of a few hours and rapidly deplete them of glycogen. He is then ready to have his blood sugar drop below normal on his regular insulin ration. This is of especial

importance in aged individuals because to them insulin shock, so called, is a real shock, from the effects of which they sometimes do not completely recover even though they are brought out of it temporarily. The treatment of this is the internist's problem, but the surgeon must not be a stranger to it. Glucose intravenously must be given at once. The presence of sugar in the urine cannot be taken as an infallible guide when the patient is taking large amounts of insulin. Urine coming from the kidney may be sugar-free at the time of passing or withdrawal by catheter, but, mixed with sugar-containing urine in the bladder, give a positive test. In severe cases it may be wise to order a small amount of orange juice upon obtaining a completely sugar-free specimen, and also to take the blood sugar twice a day so long as there is uncertainty. We feel that most of these elderly diabetics do better with a blood sugar somewhat above normal.

TABLE I. CLASSIFICATION

Gangrene	No.	Per cent
Abscesses	55	29.7
Carbuncles	20	10.8
Osteomyelitis	16	8.7
Infections	16	8.7
Ulcer—foot	12	6.4
Mastoid—acute	8	4.4
Pelvic	8	4.4
Goiter—toxic	7	3.8
Gall bladder	3	1.6
Hernia, strang. or incarc.	3	1.6
	3	1.6
Miscellaneous	34	18.3
	185	100.00
Died	43	23.2

Table I gives a general idea of the relative frequency with which several surgical conditions are met. It will be noted that the great majority, after gangrene, is made up of some type of infection and therefore that nearly 70 per cent belong in the class of complications typically found in diabetics. Time will not permit the discussion of all of these. Most of them do not need special mention. Two, however, are of such vital importance that they demand attention.

First Carbuncle.—This is very common,

ranking second only to gangrene in our experience, somewhat more frequent than others report. There were sixteen cases in a series of 185 surgical patients. It consti-



Fig. 7. Carbuncle. Outlines of one transverse and three vertical incisions are seen.

tutes a very grave complication and for the patient its care is a major procedure. Most of these are extensive (Fig. 7) and the patients severely toxic. Metabolic control is of prime importance.

The rule should be to do the most minor operation which will reduce absorption to the minimum. Excision is to be absolutely condemned. Our practice is to make one incision through the longest diameter from healthy tissue to healthy tissue, and one or more incisions, depending on the size of the lesion, at right angles, and then rapidly to trim out the worst of the base under the flaps thus made. If the margin of the infected area underneath the skin is removed, extension need not be feared. The resulting cavity is packed with gauze and the remaining infected slough picked out at subsequent dressings.

Gangrene.—There were fifty-five cases of gangrene in 185 surgical diabetics. The prevalence of this complication is due to the tendency of diabetic arteries to develop an intimal sclerosis (Fig. 4), thus reducing the lumen of the larger vessels.

TABLE II. PERCENTAGE OF ADMISSIONS HAVING GANGRENE

Year	Admissions	Gangrene	Per cent
1929	92	6	6.5
1930	103	5	4.8
1931	143	11	7.7
1932	310	25	8.0
1933	143	8	5.6
Total	791	55	6.9

Shields Warren² says: "Arterial occlusion in typical diabetic gangrene is a gradual process, at least at first—a progressive encroachment on the lumen of the artery by intimal thickening, not infrequently showing heavy deposits of lipoid. Hence there is time for collateral circulation to develop. While there may have been pain and disability during the process of readjustment, eventually a delicate point of equilibrium is reached where the combined blood supply from both main vessels and collaterals is just sufficient for the ordinary needs of the limb. Any unusual stress will tip the balance. There will be insufficient blood supply to maintain life of the tissues under abnormal condition, too much to permit mummification. Moist gangrene results, and all too often leads to generalized sepsis.

"On this basis we may say that the typical diabetic gangrene is preventable. Injury and particularly infection can be prevented. Dirt, ill-fitting shoes, carelessness, all simple, all inexcusable in properly taught patients."

We find trimming corns and ingrown toe nails the most common immediate cause of gangrene.

It is to be noted, however, that there are all gradations between the typical dry arteriosclerotic (Fig. 3) and moist diabetic (Fig. 1) gangrenes.

The one great surgical question here is, "Where to amputate." Time will not permit the discussion of tests such as the histamin flare, intradermal saline, the oscillometer, etc., to determine the point of competent circulation. None of these is infallible. In the final analysis clinical judgment based on experience will probably give the best results. Absence of pulsation in the dorsalis pedis or posterior tibial does not always preclude successful amputation of a toe since collateral circulation may have developed sufficiently to permit healing. This is not

common. In the same way, absence of popliteal pulsation does not always mean amputation above the knee, but it usually does.

TABLE III. AGE INCIDENCE OF GANGRENE

	Cases	Years	Age*
(Joslin)	50	1923	61.0
(Eliason & Wright)		1926	59.2
(McKittrick & Root)		1928	64.9
(Eliason & Wright)	103	1931	69.9
(Eliason ¹)	67	1932	61.6
Our series	55	1933	59.5

*Youngest, 29 years; oldest, 80 years.

Let us say just a few words as to the actual operation. Remembering the lowered vitality of the tissues and their susceptibility to infection and recurring gangrene, technic should be followed which will best guard against their occurrence. Meticulous care in detail will often mean the difference between failure and success. The leg should be prepared the night before and a sterile dressing put on to be removed in the operating room when preparation is repeated. A tourniquet is never used. Short equal length anterior and posterior flaps are used. No clamps are placed on the skin as retractors. I have seen areas of gangrene occur at these points of pressure. No instruments touching the skin are used in the deeper parts. Bleeding points or vessels and not masses of muscle are clamped and ligated. A Gigli saw is better to sever the bone. It means less retraction and damage to muscle tissue. Flaps are closed without tension but snug enough to prevent loose space for collection of blood and serum. A soft rubber drain not touching the bone is removed in forty-eight hours. We do not feel that rapidity of operation is the first consideration. Careful, gentle, accurate work should not be sacrificed for time. Postoperative dressings should be few and far between.

Finally, I want to say again, the closer the coöperation between internist and surgeon and the more each knows about the other's problem, the larger the number of these afflicted people who will be given a little longer span of life.

BIBLIOGRAPHY

1. Eliason, Eldridge L.: Surgery of diabetic gangrene. *Ann. Surg.*, July, 1933.
2. McKittrick and Root: *Diabetic Surgery*. Lea & Febiger, 1928.
3. Warren, Shields: *The Pathology of Diabetes*. P. 133. Lea & Febiger, 1930.

SUPPURATIVE LABYRINTHITIS WITH CASE REPORTS

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DETROIT, MICHIGAN

In reviewing the subject of labyrinthitis I was struck by the fact that practically nothing on this subject has been reported before the Academy of Oto-Laryngology in the past five years. Moreover, all the work that has appeared before other special societies, or in the reports of the Year Book or the recent textbooks on otology, are in virtual agreement with the principles outlined by the Vienna School so ably represented by Barany, Neuman, Alexander and Ruttin. It speaks well for the thoroughness of the work done in Vienna that Ruttin's "Monograph on Diseases of the Labyrinth" twenty years after its publication is still a reliable treatise on the labyrinth and in full accord with recent textbooks on this subject.

The postulation that the changes in the labyrinth could be explained best by the theory that there was a circulating fluid in the semicircular canals, has borne the test of time and is quite generally accepted today. The classification of the Vienna school of four groups of labyrinth cases has not been much improved, namely, (1) circumscribed labyrinthitis, (2) diffuse serous labyrinthitis, (3) diffuse purulent manifest labyrinthitis, (4) diffuse purulent latent labyrinthitis.

The first case is a man, age thirty-eight, who had chronic double mastoiditis for twenty years. The discharge was intermittent, would disappear for months at a time and never showed any severely acute symptoms. Some nine years ago, when the discharge had been quite profuse for several months, I advised operation, but at about that time the patient developed a melano-sarcoma of the shoulder and I did not wish to operate until this growth was entirely under control. By that time the ear discharge had ceased. For the last six years there has been a vegetative dermatitis of each auditory canal which had persisted for years in spite of treatment.

In November, 1931, this patient developed a very severe vertigo, with dizziness and vomiting. There was no headache. He had been examined at one of the clinics and nothing pathological had been found. However, the ears were only superficially examined. My first examination was on November 8, 1931, five days after the onset of the dizziness. Hearing tests on that date were as follows:

Right ear	Forks 256 D. v.	Left ear
70 seconds	Bone Cond. normal 60 minutes	80 seconds
85 seconds	Air cond. normal 140	Not heard
Minus 80 seconds	A fork 96 D. v.	Not heard
Minus 12 seconds	C fork 2048 D. v.	Minus 42 right
5 inches	Watch, normal 60 seconds	Light contact

There was a spontaneous rotary nystagmus to the right, worse on looking to the right. Fistula test was negative for each ear. There was no hearing in the left ear when a Barany noise apparatus was used in the right ear. There was a polyp in the

left canal near the tympanum, but very little discharge.

Irrigating the left ear with hot water, temperature 110, gave almost complete cessation of the spontaneous rotary nystagmus to the right. Hot water was used as the patient already had a rotary nystagmus to the right. Ten turns to the right gave a slight horizontal nystagmus to the left for ten seconds. Ten turns to the left gave strong horizontal nystagmus to right for twenty seconds. A diagnosis of localized labyrinthitis was made and the patient was sent to Grace Hospital, where he was kept under close observation. He entered the hospital November 9, 1931, with a temperature of 99.4, pulse 70, respiration 20. The temperature continued about this level, being under 99.8, until the day of his operation, November 20.

A spinal puncture on November 9 showed clear fluid, globulin negative with 10 cells per cu. mm. of the small mononuclear type. Smear and culture were negative for organisms and the Wassermann on the fluid was negative.

An examination of the discharge from the ear was negative for tuberculosis.

The blood count showed 14,555 white cells, 73 per cent polymorphonuclears, 5 per cent eosinophils, with 22 per cent mononuclears.

A general examination revealed a normal chest and abdomen. There were several bad teeth, two of which were abscessed and were removed. The extraction gave only temporary relief of his pain. The nasal accessory sinuses were normal by x-ray and clinical examination.

An x-ray examination of his mastoids resulted in the following report: "On the right side we find evidence of a chronic otitis media and mastoiditis, which at present shows no sign of activity but marked evidence of sclerosis. On the left side we find the presence of a chronic otitis media and mastoiditis with extensive changes of an active osteomyelitis and considerable destruction of the alveolar process. The etiology of these infections of course cannot be determined from the roentgenographic appearance, neither could we rule out or ascertain the presence of a cholesteatoma." (H. A. Jarre, M.D.) I had asked in particular for a diagnosis of the possible presence of a cholesteatoma.

Soon after entering the hospital he developed severe pain in the left mastoid area, but the dizziness became less. On November 16 there was still a slight response from irrigating the left ear with cold water, but hot water gave no result. A consultation with our neurologist, Dr. Hershey, showed symptoms of mild meningeal irritation of the middle fossa of the left side.

There was also a slight facial nerve weakness.

The spinal fluid examination on November 16 showed 13 cells per cu. mm., all small mononuclears,

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and the tests were negative for globulin. The fluid was clear under normal pressure and the culture was negative.

On November 19 we could get no response from caloric irrigation of the left ear. The facial paresis was very evident and the pain was more severe.

A radical labyrinth operation was advised and was performed the following day, November 20.

The mastoid bone was opened with an electric drill, rongeur and curette, no mallet being used for fear of setting up a diffuse meningitis. The bone was sclerosed and of bony hardness.

There were a few cells full of pus in the mastoid tip and some granulation back of the lateral sinus. Otherwise the mastoid area was dense solid bone.

The antrum was entered and found filled with a cholesteatoma which had eroded the posterior semicircular canal; had eaten through the posterior wall of the auditory canal at the spot where I had noted the polyp. There was also an exposure of the dura of the middle fossa, which was thickened and was dense white.

A radical mastoidectomy was completed and I found the facial nerve exposed in its horizontal portion, but it was inact.

The procedure of Neuman for opening the labyrinth was then carried out, the exposed opening into the posterior semicircular canal being enlarged until a bent probe could be passed forward into the vestibule. The foramen ovale and foramen rotundum were found filled in with dense bone. With a chisel these were opened to the first turn of the cochlea, so that the probe could be passed back to the posterior opening of the posterior semicircular canal previously made.

A Panse plastic flap was used, the upper flap being sutured. The wound was packed with iodoform gauze.

The laboratory confirmed the presence of cholesterol crystals.

The postoperative course was uneventful except for a peculiar mental spell one night five days after the operation. It passed off easily and the neurologist regarded it merely as a neurosis.

Nine days after the operation the patient was up in a wheel chair and in two weeks had left the hospital.

There was a slight persistent discharge from the region of the labyrinth for some months, but this eventually ceased, after two or three small sequestra of bone were removed. The facial paralysis, which became complete immediately after the operation, gradually improved with the use of the rapid sinusoidal current, and at the present time there is full use of the facial muscles.

It is rather interesting that the vegetative dermatitis of the canal entirely cleared up in the left ear, although there has been no change in the canal of the right ear.

The second case is a girl, age nine, who developed an abscess in her right ear January 28 following an acute cold. The drum was red and bulging; the temperature was 102.5; a free paracentesis was done, which was followed by free discharge. In spite of careful treatment the case went on to mastoiditis, with pain, tenderness to pressure and redness of the mastoid region. The right mastoid was operated on February 9, when pus, granulations and breaking down of the mastoid cells were found.

Two days later the temperature was normal, but it ran up to 103.4 on the twelfth. It was normal on the thirteenth, fourteenth and fifteenth, until late in

the evening. At this time we noted for the first time a spontaneous rotary nystagmus to the left side. Then rather suddenly there developed a positive Kernig, neck rigidity, dizziness and severe headache, with complete loss of hearing and absence of caloric response. The patient was delirious, with the typical sharp crying of meningitis.

A spinal fluid examination showed a very turbid fluid under pressure and containing 3,400 cells per cubic mm., chiefly polymorphonuclears. The smear showed some bacteria reported as doubtful pneumococci.

I diagnosed an acute suppurative labyrinthitis with beginning meningitis and advised a radical labyrinth operation. The child was operated on twelve days after her mastoid operation. The old wound was enlarged and a radical mastoid operation was performed. The lateral sinus was exposed and found normal. The bone anterior to the sinus was then gradually removed with a gouge and curette until the posterior vertical semicircular canal was found. The opening was enlarged until a curved probe could be inserted forward into the vestibule.

There was a necrotic fistula in the horizontal semicircular canal. The oval window was then enlarged downward and forward with a chisel, a Panse plastic was made and the wound packed with iodoform gauze. The temperature went to 104 the following day. We used daily spinal fluid drainage and followed this by injecting a solution of colloidal silver. This last I have since discontinued, feeling that the spinal fluid drainage was the chief factor in recovery.

There was a very profuse discharge of cerebrospinal fluid from the ear, so that the bandages were continually kept moist, requiring frequent removal of outside dressings. The patient had rather a stormy course, quite normal for a few days and followed by spells of pain, restlessness, high temperature and some delirium. The peak of these relapses was two weeks after the labyrinth operation, when the temperature rose to 104. From then on the patient gradually improved and was two weeks later discharged from the hospital. She has remained well ever since, but of course is totally deaf in the operated ear.

In the second case reported, I believe there will be no difference in opinion as to the procedure that should be followed. There was a definite mastoiditis which was operated twelve days after the onset of the otitis media. In spite of a free opening in the drum and thorough exenteration of the mastoid cells, a fistula into the horizontal semicircular canal developed with a consequent suppurative labyrinthitis. At the time of the mastoid operation there was no evidence of labyrinth invasion, although no fistula test was made. Many feel that the fistula test is not without danger in such cases. When the labyrinth became infected, it progressed very rapidly to a diffuse suppurative labyrinthitis which immediately invaded the meninges. All are agreed that a radical labyrinthectomy is then indicated. Fortunately such acute cases are rather rare. However, I fear that in the acute otitis men-

ingitis, there may be more invasions through the labyrinth than statistics would indicate.

In the first type of case there are still differences of opinion as to the procedure to be followed. First, let us set up the facts as we can gather them. Various authorities* agree that 62 per cent of all chronic discharging ears that result in labyrinth infection are complicated by cholesteatoma. The differentiation of serous and purulent labyrinthitis may be impossible. Uffenorde does not agree that total loss of function of the labyrinth is in itself an indication for labyrinthectomy. He feels that invasion of the meninges only, justifies operation on the labyrinth. Many disagree with this.

Bruenings calls attention to the difference of opinion as to what constitutes the normal cell count of the spinal fluid.

Lund† regards three lymphocytes per cubic millimeter of spinal fluid as indicative of intra-cranial complication (meningitis). He reports further that in more than one-half of the cases in which fistula occurred the patients were infected with meningitis before symptoms of diffuse labyrinthitis appeared and before there was complete abolition of the functions of the labyrinth.

In this first case, I diagnosed a localized labyrinthitis because we could still get a response to caloric stimulation. I did not deem it wise to operate on the mastoid for fear of spreading a localized infection. However, when the process extended so that the function of the labyrinth was dead to sound, turning and caloric irrigation, when the spinal fluid examination showed a continued and even slightly increasing cell count, even though the increase was only from 10 to 13, and when we were getting evidence of involvement of the left temporo-frontal area, I felt that some operative procedure was indicated.

Formerly, I thought the profession rather united in the position that operation is contra-indicated in the acute stage of localized labyrinth infection in chronic discharging ears. However, this position has been changed in the past few years. It is not easy to determine clinically just when the localized labyrinthitis has become sufficiently walled off to render a mastoid operation safe.

In corresponding with various authors, I

†Lund: *Ztschr. t. Hals Nasen-u. Ohrenh.*, 1927-28.

*Turner, A. L., and Fraser, J. S.: *Jr. Laryng. & Otol.*, 1927.

found some difference of opinion, with the majority favoring immediate mastoid surgery when the labyrinth shows symptoms of invasion in the chronic mastoid. Their argument is that the causative factor in the labyrinth invasion is the mastoid infection. Therefore, the sooner the mastoid infection is removed, the better is the chance for the recovery of the labyrinth. Personally I feel this is a sound position. As long as the labyrinth is still responsive to stimuli, the mastoid only is operated—either a simple mastoidectomy or a radical, as conditions may demand.

When the infection in the labyrinth has become total, as indicated by absolute loss of hearing, absence of response to turning, caloric irrigation and fistula tests, there is small possibility of there being any recovery of hearing. There exists considerable difference of opinion also as to what procedure should be followed at this stage.

One group emphasizes the fact that the next step in the progression of the labyrinthitis is involvement of the meninges, which may easily prove fatal. Therefore, to prevent this, they are inclined to do a radical labyrinth operation just as soon as the tests indicate total destruction of the labyrinth. I favor this view. However, the severity of the symptoms may be taken into consideration to modify our view in the individual case.

The second group stresses the fact that it is often impossible to differentiate positively a diffuse serous from a diffuse suppurative labyrinthitis. Therefore, they prefer to wait in the hope that the lesion may prove to be a serous labyrinthitis; or if suppurative, that it will be limited entirely to the labyrinth and end in recovery. That this result occurs at times there can be small doubt; however, it appeals to me as being the more dangerous procedure.

The difference between the two views accentuates the importance of early recognition of meningitis. It is universally agreed that the examination of the spinal fluid offers the most accurate gauge as to involvement of the meninges.

According to Kolmer the normal pressure of the spinal fluid is from 100–200 mm. of water and the cell count may vary from 0 to 10, although Lund claims three lymphocytes per cm. is indicative of intra-cranial complications. Globulin and albumin are absent

and the quantitative protein varies from 15 to 40 mg. per 100 c.c. In meningitis there is marked increase of pressure, the fluid becomes cloudy up to thick pus and a coagulum forms. The cell count increases, chiefly the polymorphonuclears; the count may run up to 5,000. Globulin and albumin are increased and the quantitative protein is increased from 40 mg. to 5,000 mg. per 100

c.c. Sugar is reduced and the colloidal gold gives the meningitic curve.

The advanced case of meningitis offers but little difficulty in the spinal fluid interpretation. The earliest stage may show very mild changes and it is essential that a very complete examination of the spinal fluid should be made to note these very early alterations.

PERNOSTON AS A PRE-ANESTHETIC*

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DETROIT, MICHIGAN

No attempt will be made in this paper to discuss the now somewhat voluminous bibliography of pernoston. A few introductory remarks may, however, be advisable.

The chemistry and pharmacology of pernoston may be read in any of the more extensive reports on the subject. Those who intend to use pernoston must remember that it is an hypnotic and amnesic agent. It is not a new anesthetic. It is not recommended as a substitute for ether or ethylene or nitrous oxide or any other anesthetic. It is recommended only as an additional instrument in the psychic preparation of the patient. Many patients will tell the surgeon that they dread taking the anesthetic more than the operation itself. I believe that I am safe in saying that the nervous tension existing at the time the patient begins to inhale the anesthetic continues to manifest its presence during the entire operation. If pernoston did nothing more than abolish the fear coincident to the operation its use would be justified. Dr. Bernhard Friedlander has written an excellent article on the theories of sleep and his suggestion of the psychic preparation of the patient for hours or even days before the advent of the operation is a good one. I do believe that too long a preparation may defeat its purpose, however.

Any anesthetic, and in this case an hypnotic, in the hands of the less qualified is dangerous. An attempt will therefore be made to outline a definite routine which, I believe, will be of value to those who are not familiar with the action and administration of pernoston:

1. If it is at all possible, the patient should enter the hospital eighteen to twenty

hours before the time set for operation. In this way it is possible for the patient to become acquainted with those nurses and members of the house staff who will assist the doctor in making the patient's stay in the hospital as comfortable as possible. The patient is put to bed with bath-room privileges only. The day before operation luminal grains $\frac{1}{4}$ every four hours are given and at night luminal grains 1- $\frac{1}{2}$.

2. I usually tell my patients that they are going to receive an injection in the arm that will put them to sleep in bed. I explain why the drug is being used and the effect it will have upon them.

3. One hour before operation morphine sulphate grains $\frac{1}{6}$ and atrophine sulphate grains $\frac{1}{150}$ are given by hypodermic. In the earlier cases of this series no hypodermic was given, but since its introduction the amount of pernoston necessary to produce sleep has been reduced, and the results have been uniformly satisfactory. Some workers do not advise the use of opiates prior to the injection of pernoston. We have had no ill effects from their use.

4. Just before beginning the injection I again explain to the patient the effect that the drug will have. The patient is asked to relax as much as possible and not to resist the "sleepy feeling" that will follow. As in the general practice of medicine one must

*This report covers a series of fifty cases which came under my supervision at The Fifth Avenue Hospital, New York City. Dr. Herbert C. Chase, under whom I had the privilege of working, has used pernoston in 300 additional cases. I am indebted to him for his instruction in the use of the drug and for the opportunity of writing this paper.

†Dr. Hoffman received his Bachelor's degree from the University of Michigan in June, 1927, and his Doctor's degree in June, 1930. During his sophomore year he was assistant in the Department of Bacteriology. He served his internship at the Grace Hospital, Detroit, later taking post-graduate work in surgical pathology at Johns Hopkins. Dr. Hoffman was Resident Surgeon at The Fifth Avenue Hospital, New York City, from January, 1932, to January, 1933. He specializes in Gynecology.

attempt to win the patient's confidence. No one can over-estimate the value of a sympathetic relationship between doctor and patient.

5. After the preparation of the skin in the usual manner the injection of pernoston is begun one-half hour before operation. We have not been in the habit of administering pernoston according to body weight. The injection is given very slowly, one to two minutes being required for the injection of 1 c.c. of the drug. The more slowly the injection is given, the less the amount of pernoston necessary to produce sleep. The rate of injection should be controlled by a watch.

6. In judging the dosage of pernoston the reaction of the patient is used as a control. Most men use the maximum dosage calculated from the body weight of the patient as a control. I have no objection to this method, but in many cases it will be found that the calculated dosage is more than is necessary to produce sleep, and vice versa. A robust individual of 150 pounds may require as much of the drug as a patient weighing 125 pounds. The dosage, I believe, is more dependent upon the patient's tolerance than upon the body weight. Age, too, seems to play an important part.

The patient receiving pernoston passes through four definite stages:

1. He will first complain of a "sleepy feeling."

2. This "sleepy feeling" gradually increases. The patient, however, still responds to questions and will open the eyes completely when spoken to.

3. During this stage the patient fails to respond to questions but instead will *attempt* to open the eyes.

4. The patient fails to answer questions, there is no attempt at opening the eyes, and this is followed by a gradual relaxation of the muscles of the face causing a dropping of the lower jaw. As soon as this is noted the injection is stopped. After about one-half minute $\frac{1}{2}$ to 1 c.c. more of the drug is injected.

These stages are by no means sharply demarcated but are nevertheless easily demonstrated. The sleep that follows cannot be distinguished from natural sleep. There is absolutely no danger of giving too much pernoston if the reaction of the patient is carefully watched. I would advise those

who intend to use pernoston to obtain firsthand information and instruction from someone experienced in its use. After such preliminary instruction one is better equipped to alter the technic to suit one's own likes and dislikes. One who has never used pernoston cannot expect to obtain the same uniform results as someone who has used the drug for a considerable length of time.

Pernoston sleep varies in length from two to six hours; the patient, however, remains drowsy the greater part of the day of operation. The immediate post-operative shock is greatly reduced, and the amount of sedatives necessary to control pain is greatly reduced. Upon regaining full consciousness the patient does not remember anything that has taken place since the administration of the hypnotic.

I have never given less than 4 c.c. nor more than 5.8 c.c. of pernoston at any single injection. It has never been necessary to resort to caffeine-sodium-benzoate, adrenalin, ephedrine or any other form of stimulation. There has never been any accidents or any harmful effects on the patient.

The amount of anesthetic administered during the operation is greatly reduced when pernoston is used. In many cases no ether is necessary; ethylene or nitrous oxide being all that is necessary to produce surgical anesthesia and relaxation. The induction of general anesthesia is smoother and faster. There is usually no straining or "fighting the anesthetic." The excitement stage is usually absent. Relaxation is more rapid and is obtained with much smaller quantities of anesthetic.

Recovery from the general anesthetic is much smoother when pernoston is used. The patient sleeps through the greater part of the immediate postoperative discomfort, and after regaining full consciousness requires less sedatives for the control of pain. Except for drowsiness, the patient complains of no ill effects from the pernoston sleep.

Many observers claim that postoperative nausea and vomiting are decreased, if not entirely absent, after pernoston. This has been true in this series of cases. I do not intend to discuss the etiology of the distressing conditions in this paper. I do believe, however, that other factors are just as important in the control of postoperative nausea and vomiting as the type of anesthetic used. A careful and diligent adminis-

tration of the anesthetic, or, as in this case, of the hypnotic, plays no doubt an important part.

As regards the effect on the blood pressure, pulse and respiration, our results compare favorably with those reported by other workers. There is no appreciable change in the blood pressure. One cannot say, however, that the blood pressure remains unaltered. There is a slight variation in the tension as shown by the rapidity with which the color returns on blanching the skin of the forehead on pressure. A drop of 5 to 10 mm. of Hg. is the most that has been noted. The respirations may be somewhat slower but of greater depth. (This may be due to the morphine.)

In closing, let me add that pernoston has still another place in medicine. In two cases I have used pernoston to control very severe pain when other sedatives failed. The first was a case of far advanced Berger's disease. The patient had been receiving large amounts of morphine and pantopon to control the spasms. During one attack the pain was so severe that morphine intravenously failed to relieve the patient. Small injections of pernoston were given and the patient received the first sleep he had obtained in several hours.

The other case was one of renal colic. Only slight relief was obtained from the use of morphine, atrophine and pantopon. The patient was very sensitive to opiates and developed a very severe pruritus from their use. Pernoston was resorted to with favorable results. Those who have suffered a great deal of pain will say that the memory of pain is often worse than the pain itself. In these two cases the patients were spared such memories. They remembered nothing regarding the attack of pain and were exceedingly grateful.

CONCLUSIONS

1. Pernoston is a preparation which when given intravenously produces a state of unconsciousness closely resembling sleep.
2. Pernoston is not suggested as a substitute for any general anesthetic.
3. Pernoston is an hypnotic which may be used as an additional instrument in the psychic preparation of the patient.
4. Pernoston in qualified hands will not produce any ill effects on the patient. In this series of cases there have never been any postoperative accidents nor any fatalities. Stimulants have never been resorted to.
5. Pernoston may also be used to control very severe pain.

THE OPERATION OF STERILIZATION

H. E. RANDALL, M.D.†

FLINT, MICHIGAN

The menace of the increasing numbers in our population of the feeble-minded is one of the most challenging problems of civilization to-day. The increasing number of mental defectives imposes a tremendous economic burden on the state and its components, to house and support them. An adult with an intelligence below that of a nine year child is without doubt in the class of the feeble-minded, and their number in the United States cannot be less than one million, who are thus incapable of social adaption.

Many students of population are alarmed over the increase in the number of the insane and the feeble-minded. The Human Betterment Foundation estimates the total number of mental incompetents at eighteen millions and warns of the impending danger of race deterioration. Be the increase real or apparent, the facts show a steady increase of the number requiring institutional care. Urbanization with the keener struggle for existence may be a factor in producing an increase of cacogenic cases. The Human Betterment Foundation says, "Careful studies indicate there are six millions in the United States who have been, are now, or at some future time will be legally committed as insane to state institutions . . . There are six millions additional cases who are not mentally diseased, but are so de-

†Dr. Randall is past president of the Michigan State Medical Society.

ficient in intellect with an endowment in this respect that is more than 50 per cent below average that they are often described as feeble-minded. The number who suffer from incipient mental disease sufficient at some time to incapacitate them for work but who are never legally declared insane is about as great." These figures are in accord with the results of the American Army test which showed 17.6 per cent of the white drafted men had only the mental age of children of eleven years of age, which percentage applied to the general population means nineteen millions in America who may require control. These alarming figures have earned for their reporters the name of alarmist eugenists. No matter what may be the true number of the mentally incompetent, less than 12 per cent of the feeble-minded have such mental or temperamental stability as to be eligible for parole. This means that the majority committed to state institutions are permanent guests of the state. Another interesting comment is that while 87.7 per cent of the population of our institutions are natives, 12.3 are of foreign birth, but the foreign born have the disproportionate rate of five times as many as their percentage of native population.

The British Medical Association appointed a committee to report the medical problem presented by mental deficiency, especially methods to reduce its incidence. The report rendered last year considers heredity as playing an important part but no estimate was made of the percentage due to heredity and concluded there is no single genetic basis of mental deficiency. Some feeble-minded are socially defective. Some may present considerable scholastic incapacity but may be socially capable. The committee recommends that the education and training of mental defectives to the full extent of their powers; that suitable defectives be placed within the general community and that those socially incompetent (anti social) be examined for mental defectiveness and if so found be placed in colonies.

As to sterilization the committee reported that, "if this should be applied only to certifiable mental defectives the incidence would not be appreciably reduced. That to be really effective the operation would have to be applied to many who are not certifi-

able mental defectives, because there are a large number of Mendelian 'carriers now at large in any community.'"

While it is true that the results of sterilization are negative, it can be easily seen that in two cases I sterilized one day, that the state could have saved much expense. One woman had had ten children, all feeble-minded. The other woman was the mother of eight. I submit that had these two cases been recognized and sterilized before the birth of these children the state would have been spared the care of eighteen children. Neither of these had passed the child bearing age and we may rest assured that they will not bring any more children in this world.

Only two effective methods of control and prevention are available. They are segregation and sterilization. There is no cure for feeble-mindedness. Segregation requires buildings, equipment and personnel. The Michigan Home now has 3,800 patients and 800 on the waiting list. Sterilization is the only prevention. Birth control is hardly worth consideration in these cases.

Whether the laws of heredity are thoroughly known or not, sufficient evidence is available that heredity is a factor, the largest discoverable cause of mental deficiency.

If all human breeding could be controlled there would still be cases of feeble-mindedness it is admitted. Sterilization is not a panacea because the condition is widespread throughout society. This does not mean we should fold our hands and let nature take her course.

Twenty-seven states now have sterilization laws. The legal status of sterilization has been established by our highest courts. Castration on the other hand has been held to "be unusual punishment" by the federal courts.

OPERATION

The following technic has been used by me in 700 sterilizations since 1921. It is a hysterо-salpingectomy. No operation should be considered which does not resect both tubes.

In a female a 3-inch low midline incision is made or a Pfannenstiel incision may be used. The finger and thumb of the left hand are introduced into the abdomen grasping the left ovary and tube. Occasionally with a small retro-flexed uterus it is necessary to use a tenaculum hook to bring

the uterus up into the wound. While an assistant makes traction on the tube, a curved pair of hemostatic crushes the horn of the uterus, a curved pair of scissors clips off the horn of the uterus, making certain the excision is carried down into the uterine muscles. This wound in the uterine horn is closed with a No. 5 Emmett needle threaded with chromic catgut. One and one-half inch of the tube then is excised. A needle is introduced throughout surface of the broad ligament below the round ligament which next picks up the proximal end of the tube and the needle is then passed back through the broad ligament. By traction of this suture the new proximal end of the Fallopian tube is brought into contact with the posterior surface of the broad ligament. The suture is then tied. This operation is repeated on the opposite side.

We found that in patients who had borne children that occasionally this technic would result in troublesome hemorrhage from the wound in the uterus. In these cases a double salpingectomy is preferable. In California Dr. Margaret Smyth devised an operation in which the Fallopian tube is grasped by two Allis forceps placed one and one-half inches apart which is the amount of tube usually removed. An incision is made through the peritoneal coat and the mucous and the muscular coats removed. The stumps are cauterized with carbolic acid and the two ends of the peritoneal surface are ligated, a silk ligature being used around the tube close to uterus. The peritoneum is sutured over this empty space. The difficulty with this procedure is that the tissues do not readily separate.

There has been one pregnancy following the hystero-salpingectomy operation but in this case a second operation revealed what appeared to be a one normal tube. It does not appear possible for a pregnancy to occur if this operation is carried out in full detail. The operation is simple and can be done inside of fifteen minutes.

In the male the operation is much simpler. An incision is made over the vas deferens as it is held between the thumb and finger. The vas feels like a small wire, and when reached peels out easily and at least one and one-half inches are excised. Interrupted

chromic catgut suture including dartos and skin are inserted and the operation on the opposite vas is done in an identical manner.

After-care is ten days in bed in case of females and a week for males.

In this series of 700 cases, nearly all of which were done at the Michigan Home and Training school at Lapeer, Michigan, there have been two deaths. One case died suddenly one week after operation probably due to embolus. The other case was an idiot who should never have been ordered sterilized, who died four hours after from respiratory failure. General anesthetic.

Since the operation of sterilization is elective as to time, certain precautions should be taken. Examination of the throat and smear from both throat and vagina are taken. No case is operated that has a fever from any cause. The usual urinal examination and white blood cell counts are made. Wassermanns are taken as a routine. In the male the bleeding and coagulation time are taken. With these precautions the operation should carry no mortality.

CONCLUSION

Sterilization being a negative eugenic measure it is not a panacea to eliminate all mental cases because mental cases are too widely spread in our population.

The idiot and the imbecile do not need to be sterilized but do require institutional care. The pathological basis for amentia is not in gross appearance but in a microscopic arrest of brain cells.

If all human breeding could be controlled there would still be cases of feeble-mindedness.

Segregation and sterilization are the only two effective preventive measures. Birth control is of little value in this class of patients.

The operation of sterilization by hystero-salpingectomy is easily done, is effective and should carry no mortality.

Only those about to be paroled from state institutions should be sterilized. Sterilization should also be done outside state institutions, where proper authorities request it.

There are no deleterious after effects and the operation does not promote sex delinquency.

MICHIGAN'S DEPARTMENT OF HEALTH

C. C. SLEMONS, M.D., Dr.P.H., Commissioner
LANSING, MICHIGAN

COMMUNITY SANITATION UNDER THE CWA

Rural schools of Michigan are profiting by the Community Sanitation project being carried on under the CWA, known officially as Federal Project No. 133 J. The United States Public Health Service has national supervision of the program, with the administration in Michigan delegated to the Michigan Department of Health. All expenditures of funds are made directly by the State Emergency Welfare Relief Commission.

So far as the State Department of Health is concerned, the major emphasis of the project is being placed upon the construction of sanitary privies, with the safeguarding of wells, the draining and grading of school grounds, and the improvement of ventilation as secondary objectives.

A county supervisor, working in close collaboration with the local CW administrator and the County Commissioner of Schools, makes a survey of the work already proposed in his county and the needs of the rural schools. Each county is urged to have not more than two or three projects, grouping many schools together, so that the laborers may go from school to school in one crew. After a plan is approved locally it must secure the authorization of the State CWA. Labor is then assigned from the quota of about 600 men allowed for this project. This labor quota is over and above that already given to each county, so that when laborers are authorized for the community sanitation work they can be added to the regular county quota.

General direction of the project in Michigan is under two assistant directors, one for the northern and one for the southern part of the state. Fourteen district supervisors work closely with 80 county supervisors. Neither clerical nor office expenses are allowed the county supervisors since that would take away from the labor quota.

The date of February 15 has been set as the deadline for construction work under this grant, so every effort is being made to get the program in operation speedily.

AMEBIC DYSENTERY

Since our account of last month, approximately 25 cases of amebic dysentery have been reported to the Michigan Department of Health. The total from August 1 of this year to date (January 15) is 54.

With only two or three exceptions, these cases have given a history of visiting Chicago, and nearly all of them stayed at the one hotel which has been traced as the source of a great many other cases.

In the smaller towns and rural territory of Michigan very few cases are being discovered. This no doubt is due at least in part to the lack of laboratory facilities in such districts. Attention is called to this to remind physicians practicing in smaller towns to be on the alert for cases having evident clinical symptoms of dysentery, and to inquire about a visit to Chicago.

Approximately two-thirds of the cases reported during the last month have been from Detroit.

A TEST EXAMINATION

A test examination to serve as an indication of the nutritional status of school children in Michigan and as a basis for any program of special relief measures was carried on in the schools of a southern county from December 4 to 15.

The county in which the examination was to be made was selected by the State Emergency Welfare Relief Administrator as one of those most affected by the depression. With the coöperation of school and relief officials, ten schools were visited and 2,846 children were screened by members of the staff of the Michigan Department of Health. From this group, 787 were referred for examination. Two practicing pediatricians from Detroit assisted in giving the examinations, which included attention to muscle tone, subcutaneous fat, posture, defects of the nose and throat, dental defects, and weight.

Tabulation of the findings has not yet been completed.

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Manuscripts should be typewritten, double spaced, on one side of white paper 8½x11 inches. There should be a margin of 1½ inches on the left side of page.

All photographs should be clearly focused prints on glossy paper (do *not* send negatives). The standard 8x10 or 5x7 size prints are recommended.

All line drawings (charts, diagrams and sketches) are to be drawn with India ink on stiff white paper or Bristol board. Drawings are to be made with pen lines of suitable thickness to allow reduction to the width of one or two columns, as the case may be, of the Journal. Do *not* send drawings in colored ink.

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EDITORIAL...

FEBRUARY, 1934

GUARDING FOOD AND DRUGS

One of the difficulties in editing a monthly periodical is the fact that the writer is scarcely ever able to deal with a subject while it is, so to speak, hot. Editorials, timely when written, are usually produced a month before they appear in print, and during the intervening time changes may take place to modify the editor's position. We have in mind the new Food and Drugs Act which is at this time of writing under consideration by congress. The bill is "fathered" by Rexford G. Tugwell, Assistant Secretary of Agriculture. It was introduced by Senator Royal S. Copeland during the past session and referred to the Committee on Commerce. We are inclined to favor this piece of proposed legislation in hopes that it might, if nothing else, put an end to the blatant and raucous exploitation of nostrums that invades the privacy of the home over the radio. We have not seen the text of the bill so that our opinion is formed rather from a summary of its contents. The Tugwell legislation would broaden the scope of the Pure Food and Drugs Act, now in existence since 1906, so as to make unlawful all fraudulent advertising of proprietary medicines and other drugs through whatsoever medium such advertising or publicity may reach the buying public. In other words it would eliminate cheating and misrepresentation from the advertisements of drugs and medicines. If a drug were a "specific" for any disease (and every physician knows there are very few specifics) the advertisement must expressly say so. If the drug or medicine were only a palliative, the label and advertising must state so in plain language. If it is neither cure nor palliative but merely a mixture of weed juice and water with no therapeutic value whatsoever, this fact must also be set forth in terms which will not mislead the public.

We cannot see how anyone except those who have vested interests at stake could object to such legislation. It will work no hardships to the medical profession. We have no secrets that cannot be explained fully to those intelligent to understand. It will of course interfere with self-medication,

which undoubtedly does as much harm, by and large, as any benefit that has ever been derived from it. How many cases of appendicitis have proved fatal through a presumed (by the patient) innocuous dose of castor oil will never be known. Self-medication has often the effect of temporizing and postponing medical aid until it is too late to accomplish any desirable purpose.

The Tugwell measure is meeting widespread opposition. "However," comments *The Nation*, "not one of its many critics has yet brought forward a convincing answer to the major challenge of the proposed legislation. The bill is aimed solely at those quacks who prey upon a public ignorant of the complexities and phraseology of medical science. It will not hurt honest and truthful manufacturers of medicines and cosmetics. In the words of *Editor and Publisher*, which is supporting the Copeland bill: 'It is not easy to see how any producer of a legitimate product can be hurt by honest claims.' By joining forces with the quacks these legitimate producers are not only endangering the lives of thousands of people who are annually tricked into buying poisonous drugs and cosmetics but are casting suspicion upon their own integrity."

THE FREE CLINIC

A special meeting of the Wayne County Medical Society, December 20, was devoted to the economics of practice. Over five hundred were in attendance, which is a goodly percentage of the total membership, a fact we mention as showing the interest taken in medical economics as contrasted with the attitude of the profession in the no distant past. The subject which came in for major discussion was the free clinic. The discussion was likewise free and in earnest with the consensus of opinion much opposed to the extension of the free clinic and the practice of medicine by hospitals.

There is no question but that the abuse of the hospital clinic has led to the cheapening of medical service, just as those who have enjoyed the privilege of theater or railway passes are inclined to forego the pleasures of the theater or of railway travel when either involves expense. But the free clinic, which has enlarged its scope and its clientele, is already with us. Its growth has

been insidious. It has become established. It has come to be looked upon as free as public education for those who want it and thousands feel they have as much right to it as to education of the young in tax supported schools. Teachers are paid, perhaps not as much as men and women of their training and character entitle them, but anyway a living wage. The tax supported hospital (municipal) pays everyone except the *sine qua non* of the hospital—the doctor. The tax exempt non-civic hospital, or any other institution, is tax supported to the extent that it is tax exempt. We see difficulties in retracing our steps in the way of restoring the abused clinic practice to the doctor, who in taxes pays for its upkeep. A resolution was passed calling for the curtailment of the free clinic. As one speaker expressed it, the profession, in the event of the elimination of the clinic must be prepared to take over the work now being done in the clinic. One large clinic in Detroit is reported to have received \$82,000 for its operation, no part of which sum went to the doctors concerned. The clinics are presumed to be built up to a certain extent by the activities of social workers whose success is evidenced by the size of the clinic, which is possible through free services on the part of the doctor.

The medical profession is confronted with a serious problem. The federal relief fund is designed to pay a minimum fee for the medical care of indigents who receive welfare aid for fuel and food. The CWA is designed to restore the independence of as many as possible who have been in the welfare class by paying a minimum wage which is not sufficient to take them out of the charity group so far as medical care is concerned, in as much as food, clothing, shelter, and amusement will always take precedence over the unanticipated visit of the doctor. The Wayne County Medical Society's objective of restoring to the doctor the erstwhile free clinic patient will be observed with interest by every practising physician in the state. The writer may seem to place undue emphasis on the social and economic phase of medicine in Wayne County. The larger the center of population, however, the sooner adverse conditions come to a head. Thus, in a sense, Wayne County is a sort of experimental laboratory for the state.

PROFESSOR KAHN HONORED

The American Association for the Advancement of Science holds its annual meeting between Christmas and New Year's. Its membership consists of university professors and instructors as well as others who are interested in scientific subjects. It goes without saying, there is a section on medicine before which papers are read in which the writers have something to present that embodies the results of research.

This year the honor comes to Michigan and more particularly to Professor Reuben L. Kahn, of the Department of Bacteriology of the University of Michigan. Professor Kahn is already well known for his work on the diagnosis of syphilis. The title of the paper for which he has been awarded a prize of one thousand dollars is "Tissue Reactions in Immunity," in which the writer stresses the importance of the skin and other body tissues.

Kahn devised a method for measuring the immunologic response of different tissues of a protein-immunized animal, by determining the capacity of the tissues to combine with specific antigen. By means of this method, he found that the skin possesses an antigen-combining capacity more than ten times greater than muscle tissue, brain tissue or *in vivo* plasma, while the peritoneal tissues possess a combining capacity somewhat less than that of the skin.

Kahn immunized rabbits with normal horse serum and utilized horse serum antitoxin as the indicator in determining the specific reacting capacity of the tissues of the immunized animals. The method he employed consists of two steps. Rabbits are first immunized with horse serum in the usual way by means of two injections of this reagent intravenously. After a given period, these rabbits, as well as control animals, are injected with a standard arbitrary dose of diphtheria toxin, 50 minimum lethal dose, and a given dose of horse serum antitoxin. In control, non-immunized animals, the quantity of antitoxin necessary to neutralize the standard dose of toxin varies between 5 and 25 units, depending on the tissue wherein the antitoxin is injected. If the antitoxin is injected intravenously, 5 units of antitoxin are sufficient to save the animal from the 50 minimum lethal dose of toxin. If injected intracutaneously, 25 units are necessary to save the animal from toxin

death. In the case of horse serum immunized rabbits, it is found that 1,500 units are necessary to save an animal from the effects of 50 minimum lethal dose of toxin if the antitoxin is injected intracutaneously, 1,000 units causing the animal to die from the toxin. If the antitoxin is injected subcutaneously, 1,000 units save the animal from toxin death; 750 units do not prevent death. If the antitoxin is injected intraperitoneally, 1,000 units save the animal from toxin death; 750 units do not. If injected intramuscularly or intracerebrally, 100 units save the animal; 75 units do not. If injected intravenously, 75 units save the animal from toxin death; 50 units do not save the animal from death.

The reason why horse serum immunized rabbits require such large quantities of antitoxin in order to save them from toxin death is that when antitoxin is injected in a given tissue of these animals, this reagent is prevented from diffusing into all the tissues and neutralizing the toxin. In other words, the antitoxin is presumably anchored in the area of injection, while the toxin diffuses through the tissues unhampered. This anchoring of the antitoxin in the injected tissues of a horse serum-immunized animal must be due to some combination between the local tissue and the antitoxin. The results thus indicate that the combining capacity of the skin of the immunized animals for antitoxin is more than ten times as great as the combining capacity of muscle, brain and blood plasma for the antitoxin. Since the combining capacity of the blood serum for antigen *in vitro* is taken as a measure of the immunity response of an animal, the local combining capacity of a given tissue for antitoxin, which is basically specific antigen, must also be taken as an immunity response.

Kahn argues that it is perhaps to be expected that the skin would have an unusually high immune capacity since, throughout the ages, the skin has been directly exposed to parasitic invasion. This high immune capacity of the skin expresses itself in its anchoring of bacteria and other parasites and preventing their entrance into the deeper tissues.

Dr. Kahn was invited by the League of Nations Health Committee to attend a competitive conference on tests for syphilis in 1928. The conference was held at Co-

penhagen, and the Kahn reaction proved superior to the other methods—fourteen in all. In 1930, a similar conference was held at Montevideo, Uruguay, wherein twelve methods were subjected to a similar “competition.” The official report of the Montevideo conference contains the following sentence: “The majority of serologists taking part in the Montevideo conference agreed that, in the hands of Professor Kahn himself, the Kahn ‘standard’ test, which (as was the case also at the Copenhagen conference) proved to be absolutely specific and extremely sensitive, was the best of those demonstrated at the conference.”

In 1933 the Royal Academy of Italy invited Dr. Kahn to discuss the fundamental principles of his syphilis reaction and also his newer studies on tissue reactions in immunity. The immunological conference was held in Rome, in October, 1933.

THE CLINICAL THERMOMETER

For many centuries, fever was considered a distinct disease entity showing individual variations or differing degrees of intensity. Modern medicine, however, has relegated fever to the status of a symptom, but a most important symptom, of certain diseases. The use of the clinical thermometer has been responsible, in no small degree, for this change.

The earliest thermometer, which is now conceded to have been constructed during the last decade of the sixteenth century by Galileo Galilei, consisted of a glass tube sealed at one end and inverted over a vessel of water or wine. The liquid rose or fell as the air in the tube contracted or expanded with temperature change. Relative temperatures were thus indicated by the level of the liquid in relation to a crude scale beside the tube. With the view of permitting comparison between instruments, Santorini (1614) proposed that some constant, such as the temperature of snow or that of a candle flame, be agreed upon. Incidentally, he also was the first to suggest that the thermometer might be used to measure the intensity of fevers, a suggestion that was ignored for about two hundred years. The early instruments, which were first

called “thermometers” in 1624 by Leurechon, represented barometric as well as thermal changes, and thus fluctuated in spite of temperature constancy. A different type of thermometer, but one which was also subject to the effects of atmospheric pressure, was that devised by Jean Rey in 1632. It consisted of a vertical glass tube dilated below and continued above in a long slender neck. When the vessel was partly filled with water, different temperature conditions changed the water level. This thermometer depended upon the principle of liquid expansion, whereas the earlier type had involved the expansion of air.

Following Torticelli's discovery of the pressure of the atmosphere, Ferdinand II, Duke of Tuscany (1641), produced the first true thermometer by sealing the tube of Rey's instrument. Within a decade, several varieties of this instrument, known as the Florentine thermometer, were devised. In these, the zero point indicated a mild summer temperature, while relative heat or cold was shown by the deviation from the zero level. Although no essential improvement was made upon the instrument until the time of Fahrenheit, scientists of the day, such as Boyle, Hooke, Huyghens and Delancé, attempted to establish fixed temperature points. Among the suggested temperature standards were: the temperature of freezing water, that of the freezing or thawing of oil of aniseed, the melting point of butter or tallow, and the boiling point of alcohol. Renaldino (1694) was the first who attempted to fix both the melting point of ice and the boiling point of water as standards of thermometric use.

During the first quarter of the eighteenth century, exceptional thermometers were devised by Daniel Gabriel Fahrenheit, a maker of scientific instruments in Amsterdam. In his thermometers, a cylindrical fluid chamber was used in place of the spherical bulb of the older thermometers, and both mercury and alcohol were employed as thermometric liquids. Fahrenheit used three fixed points in the calibration of his thermometers: the temperature of a mixture of ice, water and sal-ammoniac, the temperature of a mixture of water and ice, and the temperature of the human body. According to an arbitrary scale which he devised, these points coincided with 0°, 32° and 96° respectively. When this scale was

lengthened, it was found that the boiling point of water registered 212° , and, in some thermometers, measurement could be made as high as 600° , near the boiling point of mercury. The popularity of Fahrenheit's thermometers was due largely to their accuracy and superior workmanship. Two thermometers preserved in the Leyden Museum, when compared with one another, registered the freezing point of water within a tenth degree.

A thermometer, which has been more widely used in Germany than elsewhere, was devised by Réaumur in 1730. Réaumur found that one thousand parts of an 80 per cent solution of alcohol at the freezing temperature of water expanded to one thousand eighty parts at the boiling point of water. On the basis of this expansion, therefore, he proposed a scale of eighty units. This scale, together with the modified Celsius scale, is used today along with that of Fahrenheit. Andreas Celsius divided the distance between the freezing and boiling points of water into one hundred units, zero representing the higher and one hundred the lower temperature. Within a few years, the scale of Celsius was reversed by Chester and Sturmer and persists with slight modifications as the centigrade scale. Due to subsequent refinement in definition and in methods of standardization, the three scales have all been modified, though in principle they are the same as those outlined by their inventors.

In spite of the extensive use of the thermometer in many fields of science during the eighteenth century, the instrument was little used in medicine. Pioneer studies on the clinical application of the thermometer, however, were made by Boerhaave (1731) and his pupils, Van Swieten and de Haen. Observations by these men and others revealed several laws of clinical thermometry: that body temperature was relatively constant despite wide fluctuation in environmental temperature, that disease and age produced modifications, and that temperature was increased locally by inflammation. Regardless of these hopeful discoveries and of the emphatic recommendation of the use of the thermometer by James Currie (1797), the thermometer was largely ignored in medical practice.

This condition was due to an almost complete ignorance of the physiological basis of

animal heat and of its variations. Before medicine could use the thermometer effectively, it awaited the discovery of oxygen by Lavoisier (1780), and the investigation of its importance in the animal body; it required the fundamental studies of Liebig (1842) on the chemical relationships of food and oxygen; it demanded the discovery by Helmholtz (1846-48) of the relation between muscular work and heat production, the recognition by Mayer that body heat was due to chemical processes in the body, and the enunciation of the mathematically exact relationships between heat and mechanical power by the physicist, Joule. As these discoveries accumulated, medical men were provided with a means of interpreting thermometric data.

The significance of clinical temperature variations in the body was first outlined by Andral (1841) and Gierse (1842); it was further emphasized by the thermometric studies of Traube (1850) and Barenprung (1851). Stimulated by these workers, Wunderlich, a professor at Leipzig, began to collect accurate thermometric data on all the stages of more than a score of diseases. After nearly twenty years, the thousands of observations of this man and his associates were collected and summarized in 1868. Wunderlich's book, more than any other factor, firmly established the importance of the thermometer as an aid in diagnosis, and as a guide in following the course of disease.

Until the latter third of the nineteenth century, the thermometers used by physicians were those designed for chemists and physicists. When such thermometers were adopted for medical purposes, it was necessary that they remain in position for a long time, and that they be read *in situ*. In addition to these inconveniences, their size limited them to hospital use. Professor Phillips of Oxford in 1851 modified the thermometer by constricting the tube directly above the bulb. This constriction served to detach various lengths of the indicating mercury column so that the highest level reached was retained. The self-registering principle of Phillips's maximum recording thermometer was incorporated in the first satisfactory medical thermometer about 1860 by William Aitken. He also reduced its length to ten inches. Various modifications were now made in the thermometer bulb to facilitate

its use in different parts of the body: it was spherical for recording axillary temperature, flat for skin temperature, and cylindrical for oral, vaginal or rectal temperature. In 1867, Clifford Allbutt designed a self-registering thermometer less than six inches long; this was the first pocket thermometer, an instrument, the use of which could be extended beyond the hospital. Some time later, pocket thermometers were constructed with scales etched on the tube and with magnified indices. These thermometers have remained practically unchanged except that the elongate constriction associated with the self-registering feature has been modified to an S-shaped configuration. During the period from 1860 to 1890, the clinical thermometer developed from a clumsy device to a scientific implement; likewise, it changed from an occasionally used instrument to one of world-wide application.

—W. T. D.

MEDICAL ECONOMICS*

LEROY W. HULL, M.D.
DETROIT, MICHIGAN

The question of medical economics has within the past few years become a major problem to each and every one of us engaged in the practice of our profession. It behooves us all to become conversant with its major problems. That there are great social changes taking place in our body politic must be evident to you all. The commission on medical education of American Medical Colleges has recognized these changes and the new demands that are being made on the medical profession and urges increased training of physicians in sociology and economics. There is a definite lag between the knowledge of medicine that is available and the delivery of that knowledge to the public, its potential consumer, and the medical profession has been severely criticized because of that fact. You all know that to be true and even though we stand ready to do our part, if the public will let us, that does not save us from criticism any more than we excuse those in charge of our government for the recent wholesale slaughter and burying of hogs while we as taxpayers are buying meat for the 250,000 persons being fed at public expense in Detroit. That has been one of the reasons given for various schemes for the reorganization of the methods of medical practice by philanthropists, economists, sociologists, socialists, public officials, insurance agents, etc. That the promoters of some of these schemes have not always had behind them the altruistic ideas expressed we know and we also know that the so-called reformer is usually congenitally possessed of a one-track mind. However, it is up to us to recognize that control of medical practice is being sought by outside agencies and to be ready. It should be a matter of pride to us all that our colleagues in this state have been

awake to what is happening and are taking steps to protect the profession in Michigan through the Survey Committee of the Committee on Medical Economics of the Michigan State Medical Society. Their report and the so-called Michigan plan is being studied throughout the country. All of us should familiarize ourselves with the findings and features of this report and talk about it to our lay friends.

It is perfectly evident with its present financial returns from the practice of his profession, there can be no continuation for the physician of the position in society which he rightfully believes he should hold in return for the quality and quantity of service he gives to society. I feel that unless a real effort is made by physicians themselves, and this means organization through and by themselves, that a good many features of the majority report of the Committee on the Costs of Medical Care will be put into effect and they will be the least desirable and lead to lay, hospital, local and state governmental domination.

There are those who would have us believe that the medical profession in this country is overcrowded and that the inexorable law of supply and demand is at work. We should, therefore, close our medical schools for a period of years and allow the demand to catch up with the supply.

Let us look at some of the various things that are being done and that it is proposed doing to the physician, to this man of medicine, and his practice.

The majority report of the Committee on the Costs of Medical Care reached these conclusions: First, "that medical service, both preventive and therapeutic, should be furnished largely by organized groups of physicians, dentists, nurses, pharmacists and other associated personnel, organized preferably around a hospital, for rendering complete home, office and hospital care"; and second, "that the costs of medical care be placed on a group-payment basis, through the use of insurance, through the use of taxation, or through the use of both of these methods." This is state medicine.

Perhaps there are many of you who are still laboring under the delusion that rugged individualism is still the big factor in the practice of medicine. In New York State two-thirds of the hospital beds are owned and operated by the state. Fifteen per cent of the population in 1932 received all necessities of life from public funds, including medical care. The Temporary Emergency Relief Act passed in 1931 placed medical care, food, clothing and shelter on the list as "necessities of life." The provision of such care is made an obligation on state and local agencies charged with unemployment relief. It also recognizes that persons, families, otherwise self-supporting, may be unable to pay for medical service and are to be entitled to that service, seeking thus to prevent them from becoming public charges for lack of medical care. Practically all cases of mental disease and tuberculosis, 50 per cent of venereal disease, the care of crippled children and school children are now an obligation of the public as far as medical care is concerned in New York State. Counties and cities have been authorized to construct and operate general hospitals at which citizens may obtain treatment free or for as much as they can afford to pay. So you see how far the socialization of our profession has gone.

We will take up the entrance of various laymen and lay organizations such as insurance companies as intermediaries between the physician and his patient briefly and only to condemn the practice. These forms of medical practice are prevalent par-

*This article expresses the author's view and is in no way inspired by nor is it a presentation of the Committee on Economics of the Michigan State Medical Society. It was presented before the staff of the Receiving Hospital, Detroit.

ticularly in the far west. The set-up of the "Columbia Casualty Company," a subsidiary of the Ocean Accident and Guaranty Company, Limited, of London, England, is fairly typical and is based on the insurance plan. If we accept the general concept of insurance, it is perhaps hard to criticize from the standpoint of the layman who wishes to avoid the excessive expense of a severe illness and its results on self and family. He wishes with the monthly payment of a stated sum to be freed from that worry. He wishes to budget the item of medical expense. In the case of the Columbia Casualty Company referred to, payments for medical service are provided for by setting aside 45 per cent of all premiums for medical service aside from hospitals and 12.5 per cent for hospitalization. This leaves 42.5 per cent for promotion, organization, sales, administration and profits. Physicians are signed up and paid according to a fee schedule with an office visit without treatment as one unit. Other procedures are multiples of this one unit. This is according to the French system. The average premium payment for service is given at perhaps \$5.00 a month per individual. A corps of salesmen sell this insurance on a commission of 20 per cent.

Some objections to this type of organization and services are that:

1. It disrupts the medical profession in any community in which it is established. Physicians are immediately divided into the *ins* and the *outs*.
2. The scheme rests on solicitation by salesmen and profit to the managing corporation—is simply a money-making scheme to exploit the physician.
3. Brings competition by other insurance companies, cutting of rates, cheapening of medical service, resulting in
4. Reduction of pay to the physician who has lost his private practice and perhaps is afraid to cut adrift and start over again. He may feel that he has to take it and thus lose his independence, becoming merely the hireling of some big business. He loses his opportunity for self-expression not merely economically but spiritually as well. Let us not allow medicine to become infected by the methods of big business. If we must have health insurance, let the physician assert himself and be in the driver's seat.

During the past four years we have seen private hospitals as such entering into the practice of medicine, in some cases in a frankly competitive manner through insurance, due perhaps to financial troubles of their own.

The hospitals we speak of are not those owned and operated by the physician himself, the so-called private investment hospital, but the general hospital or the university hospital, perhaps, which depends on the proceeds of an endowment, taxation and contributions from community funds, for part of its means of existence. Here are the same objections as to the insurance schemes and hospitals also are open to the charge of being unfair competition to the physician as they are not self-supporting, the very individuals with whom they are in competition are helping in their support through taxation and furnish the motive power to keep them in existence. It is a legal question whether a hospital chartered "not for profit" can enter into a scheme which promises profits. There are many other objections which we cannot take up because of the time limit. However, perhaps what you have heard will stimulate you to go into this subject for yourselves as you must do.

I am not going to take up contract practice or the service rendered by our national government to veterans with non-service connected disabilities. You are all familiar with both of these forms of practice and are opposed to them.

Have we physicians been hard enough hit so far to realize that we are at the parting of the ways? Unorganized, individual effort will get us only what the charitably minded patient, insurance agent or government official will condescend to pay. We can, however, demand recognition and get it and a place in the sun through organization. Will you be satisfied with what some bureaucrat is willing that you may have?

HOME CARE

(*Illinois State Medical Journal*)

Attracted by a sign "Medical Center," I stepped into a suite occupied by two general practitioners, one holding office hours in the morning and the other in the afternoon, and a dentist who was there all day. All three worked together in the evening. This little group serving an industrial neighborhood are caring for all minor and even moderately severe cases at the office or at the patient's home. And they are doing good work.

Following a period when specialism was rampant, elaborate laboratory equipment considered essential, and hospital residence required, seemingly for every ailment, it is refreshing to find rapidly increasing emphasis placed on the value of office and home care and the quality of service that may be thus rendered to the sick person by the doctor practicing general medicine. Why should hospital expense be added to the cost of caring for a thrombotic hemorrhoid, a sebaceous cyst or a chalazion? From many sources comes the information that from 80 to 85 per cent of all ailments can be treated at home or in the doctor's office with no more equipment than a physician usually has or may have in his office or in his hand bag.

These statements are in no way derogatory to the quality of hospital service when it is rightly needed, nor to the contributions of scientific progress made by these institutions through their special staffs. They add force to the doctor's efforts to secure comfort and cure for patients in the least time and with no unnecessary expense. They emphasize the views of those doctors who believe that the development of medical science is not for its own inherent pleasure but for the good of the people and that no sick human being may ever be regarded as an "interesting specimen."

Home nursing and social service organizations have revealed how much can be done for patients outside of institutions, and with much saving to the family and also to the community. The financial costs are not the only problem; there is the recognition of the value of personal solicitude and love in the home treatment and care of the sick. Since the personal relationship of the doctor and his patient is so valuable, much may be contributed to a patient's speedy recovery by faithful service of those vitally interested in his cure. Nor may one forget the salutary influences that react on a household and family where sickness is present and lovingly attended.

PUBLIC POLICY COMMITTEE,
Illinois State Medical Society.

Subsidized, institutionalized, medicine is based upon the conception that medicine is either an omnipotent religion or an exact science. Among the Greeks it was such a religion; among the moderns it is neither an omnipotent religion, nor an exact science.

HOWARD W. HAGGARD, M.D.

FASHIONS IN ANODYNES

(Manchester Guardian)

"Civilized man is certain to use drugs of some kind," says the writer of an article in the *British Medical Journal*, "and it is extremely lucky that he is concentrating at present on such harmless" ones. Whatever we may think of the proposition that drugs are necessary to heighten the enjoyment or relieve the tedium of civilization, it is gratifying to be told once again that those fashionable at the moment are moderately innocuous. A hundred years ago every person consumed on the average a pound each of tea and coffee during the course of a year. To-day the consumption of tea has risen to nearly ten pounds a head, while that of coffee has fallen to three-quarters of a pound. More tobacco, too, is smoked—it has risen from under one pound a year for every person in 1830 to over three pounds to-day. Against this must be set the decline in the consumption of alcohol, which has dropped (reckoning in gallons of proof spirit) from nearly five gallons in 1875 to an average of two gallons to-day. There is no doubt that this shifting of the balance from alcohol to tea and tobacco involves a definite improvement in general social habits. This medical authority refuses also to join in the recurrent scares over the high tea and tobacco consumption. He mentions certainly that "the average consumption in cases of tobacco amblyopia (an eye complaint) is only three ounces a week" (not much more than the average national consumption) and also that an individual's daily cups of tea "contain about six grains of caffeine, which represents a full pharmacopoeial dose." But he also adds that the "great majority of civilized people" can take these drugs regularly throughout their adult life "without suffering any demonstrable injury."

REAL VICTORS

While the voice of the world shouts its chorus,
its pean for those who have won;
While the trumpet is sounding triumphant, and high
to the breeze and the sun,

Gay banners are waving, hands clapping, and hurrying feet
Thronging after the laurel-crowned victors, I stand
on the field of defeat.

In the shadow, 'mongst those who are fallen and
wounded and dying, and there
Chant a requiem low place my hand on their pain-
knotted brows, breathe a prayer,

Hold the hand that is helpless, and whisper, "they
only the victory win
Who have fought the good fight, and have van-
quished the self that tempts us within;

Who have held to their faith unseduced by the
prize that the world holds on high;
Who have dared for a high cause to suffer, resist,
fight,—if need be, to die."

Speak, history! who are life's victors? Unroll thy
long annals and say.—
Are they those whom the world called the victors,
who won the success of the day?

The martyrs, or Nero? The Spartans who fell at
Thermopylae's tryst.
Or the Persians and Xerxes? His judges, or
Socrates? Pilate or Christ?

W. W. STORY.

GOVERNMENT RECOVERY AGENCIES
OF 1933

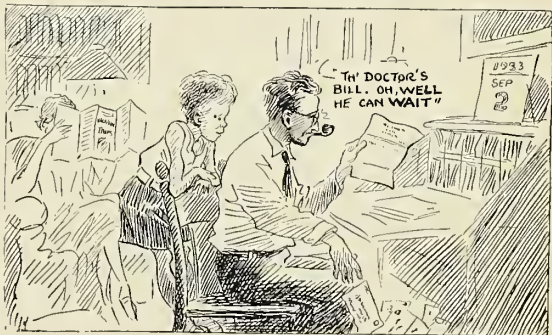
AAA—Agricultural Adjustment Administration
CCC—Civilian Conservation Corps
CCC—Commodity Credits Corporation
CSB—Central Statistics Bureau
CWA—Civil Works Administration
ECNR—Executive Council for National Recovery
ECPC—Executive Commercial Policy Committee
FACA—Federal Alcohol Control Administration
FCA—Farm Credit Administration
FCT—Federal Coördinator of Transportation
FDIC—Federal Deposit Insurance Corporation
FESB—Federal Employment Stabilization Board
FERA—Federal Emergency Relief Administration
FHC—Federal Housing Corporation
FHOLC—Federal Home Owners' Loan Corporation
FSHC—Federal Subsistence Homestead Corporation
FSRC—Federal Surplus Relief Corporation
NEC—National Emergency Council
NIRA—National Industrial Recovery Act
NLB—National Labor Board
NRA—National Recovery Administration
PAB—Petroleum Administrative Board
PRA—Presidential Reemployment Agreements
PWA—Public Works Administration
SAB—Science Advisory Board
TVA—Tennessee Valley Authority

—From the *Literary Digest*.

WAITING FOR THE DOCTOR AND MAKING THE DOCTOR WAIT



When it's important that the baby lives



When it's unimportant whether the doctor lives

CORRESPONDENCE

DR. LUCE WRITES

To the Editor:

We had a comparatively calm trip across the Atlantic. We spent the greater part of the time in reading every article on Health Insurance that has appeared in the Supplement of the *British Medical Journal* for the year 1933. I also read numerous articles, pro and con, especially con. We fully realize the importance of our mission and the amount of work that it entails. We shall cover the work from every angle, from the viewpoint of obtaining facts, indisputable facts, and none other.

We have met a large number of people, and our reception has been most cordial. The American people could do well to copy the courtesy, kindness and consideration of the English towards foreign visitors.

We shall present our findings immediately on our return to the Medical Economics Committee, the Council of the Michigan State Medical Society, and, through these bodies, to the Profession.

Dr. Sinai and I again will be glad to meet the Statue of Liberty face to face in the early part of February.

H. A. LUCE.

London, England, January 15, 1934.

OBJECTS TO INSTITUTIONAL PRACTICE OF MEDICINE

To the Editor:

For the last few years it has been increasingly apparent to those interested in medicine that many of the problems of doctors arise from the fact that the cities and municipalities enter the practice of medicine; especially is this true of institutions such as the Detroit College of Medicine, the Receiving Hospital, the University Hospital, and the University of Michigan.

At the present time in many large hospitals in the city the medical interne, who serves either two or three years, has opportunity to care for only a very few minor injury cases, as most of the accident cases are taken to the above mentioned hospitals. After these men have served three or four years in hospitals, and have received the very finest training, they are reluctant to go out to practice in the cities and towns in Michigan, where there is often a real need for such well-trained men, simply because patients who are well able to pay for services, when advised that they need operation or hospital care, go into hospitals where they can be treated as clinic patients. This does not work out well for the good of the patient, for the practice of medicine, or for the taxpayer. It is true that the taxpayers could be saved millions of dollars if these patients were sent to the private hospitals which at this time are only thirty or forty per cent occupied.

At the present time we have been advised by those who we presume are reliably informed that there is need for a hospital for the care of psychopathic cases and for those suffering from various

mental diseases. As a measure for saving the taxpayers millions of dollars, it has been suggested that one-half of the beds in the Detroit Receiving Hospital and the University Hospital be taken over for the care of this type of patient, and let the regular accident and medical and surgical cases be taken care of in their own towns.

I feel that it should be the earnest desire of every professional man in the state to get behind every constructive effort being made by the profession for the betterment of the physicians themselves as well as the citizens of Michigan.

CLARK D. BROOKS.

Detroit, January 5, 1934.

EVERY CALL ANSWERED

To the Editor:

Doctors, as well as other persons, play heroic rôles in difficult times. Doctors may easily be listed among the heroic professions of this depression period, and for this they pay a heavy price. They have learned to make strict economy even more stringent and have permitted deficits to pile up against some future day of reckoning. They have preferred to suffer a financial deficit rather than permit a failure in service. During the most trying years known to this, or any generation, the medical profession has stood its ground; it has withheld nothing. Interminable bank holidays are the order of the day, but who ever heard of a doctor's holiday? Day and night through storm and sleet, rain, or fog, ice, wind, hail, or sunshine, the call for service has been answered, and regardless of pinching economic losses, doctors have borne the load of service unflinching. As a result medicine has attained a new high level of respect and good-will, and as we approach a turn in the economic tide, the doctor stands as a new type of hero among the ranks of recovery agencies that are helping men, women, and children to enter what we hope is the promised land of a new and better day.

H.B.K.

OBITUARY

DR. CHARLES BRANCH

Dr. Charles Branch died of cerebral hemorrhage in the Gerber Memorial Hospital at Fremont, Michigan, December 19, 1933, at the age of 57 years.

He was born in 1876, graduated from the Kentucky School of Medicine in 1905, and began the practice of medicine in Muskegon County, Michigan, then went to Adams County, Indiana, for several years after which he returned to White Cloud, Michigan, and assumed his father's practice in 1930, until his death.

He was a member of the Newaygo County Medical Society and Michigan State Medical Society.

January 11, 1934.

SOCIETY ACTIVITY

PUBLICITY

To State Officers, Committee Chairmen,
Committee Members
Gentlemen:

The Council, at its meeting, directed the Secretary to call to the attention of all officers and committeemen the following provisions of our Constitution and By-Laws:

Article 4—Section 1: The House of Delegates shall be the legislative body of the Society.

Article 4—Section 4: The House of Delegates shall transact all of the business of the Society.

Article 5—Section 1: The Council shall have the full authority and power of the House of Delegates between annual sessions unless the House of Delegates be called in special session.

BY-LAWS

Chapter 3—Sec. 7-G: The House of Delegates shall approve all memorials and resolutions in the name of the Society before the same become effective. Provided, that in the interim, in the presence of a necessity for prompt action, the Council is empowered to act in behalf of the Society.

Chapter 4—Sec. 4-(2): The Secretary shall conduct all the official correspondence of the Society.

Chapter 4—Sec. 4-(8): The Secretary shall send out all official notices.

Chapter 4—Section 4-(9): The Secretary shall receive and transmit to the House of Delegates or the Council all committee and officers' reports.

Chapter 5—Section 1: The Council is the Executive body of the Society

Chapter 7: When prompt speech and action are imperative, authority to speak and act in the name of the Society is invested in the Council.

The Council desires that these provisions be strictly observed in regard to the publication of interviews, the imparting of information to the press and the public release of reports *before* official action has been recorded by the House of Delegates or the Council in all matters pertaining to organizational activities or organizational problems.

By Direction of the Council.

F. C. WARNSHUIS, *Secretary*.

PREVENTIVE MEDICINE YOUR PARTICIPATION

In the January issue of this JOURNAL your committee stated that it would next discuss the need of preparing physicians for active participation in the community public health service. During the past two decades noteworthy progress has been made in reducing the mortality from such diseases as tuberculosis, diphtheria, typhoid fever, smallpox, and other preventable causes. The public mind has been aroused to the necessity of community effort in the furtherance of such public health services. There is a real public demand that something be done to reduce the prevalence of communicable diseases and to improve the health tone of the growing child. In general, such objectives may be accomplished either through the expansion of official health departments which will employ physicians, dentists, and other technicians on a salary basis, or the same goal may be better reached by bringing into active coöperation the existing professional resources of the local community, both in the field of medicine and dentistry. The fulfillment of this last mentioned program will require the hearty coöperation of the local health service which acts as a stimulating agency in forcibly bringing to the attention of the public the need of such preventive services. Public health is but a summation of personal health, and the success of any effort to eliminate needless illness from preventive causes depends upon the success with which we can stimulate a personal interest on the part of each individual citizen, more especially the interest of the parent in the care of his or her child.

However, before the health educational program is vigorously pursued by the local health and education authorities, it becomes necessary to prepare the profession, first, with respect to the group plan, which should be under the control and supervision of the local medical society, and secondly, with regard to the technical procedures to be followed. The physician in private practice should be willing to subordinate his personal views to those of the plan sponsored by the organized profession. Failure to do so would result in misinterpretation on the part of the public.

If children are to be protected against diphtheria every coöperating physician must be acquainted with the technic of immuniza-

tion and must be conversant with the accepted practices, he must know whether toxin-antitoxin or toxoid is to be used, he must have a knowledge of the reactions which may be expected in children at various ages, he must know the length of time for which protection is usually given, and must be prepared with answers for the numerous inquiries which will occur to the public mind.

A plan for the discovery of the early case of tuberculosis necessitates a complete understanding of the tuberculin test and its relative importance in relation to the x-ray examination of the chest and the general physical examination of the patient. Such a group plan involves a standardization in medical practice, such standards to be arrived at through group consultation and preferably controlled through the public health committee of the local medical society. In this manner the chances of misunderstandings arising on the part of the laity are minimized, especially in broadcasting the public health needs of the community.

Under the rural studies which have been sponsored by the W. K. Kellogg Foundation and the urban work as carried on by the Wayne County Medical Society, post-graduate conferences in the diagnosis, treatment and prevention of communicable diseases have been used with significant results. In cities where clinical facilities are available, it is relatively easy to organize such post-graduate courses. Conferences of this character have been held in Detroit at the Herman Kiefer Hospital during the past five years, and have been enthusiastically supported by the local medical profession. The attendance at the individual meetings has been anywhere from one hundred to three hundred physicians and these conferences have generally been held each week during the winter months.

In the Barry, Eaton, and Allegan counties, through the coöperation of the W. K. Kellogg Foundation, an opportunity has been afforded to send the local physicians to some large medical center for intensive post-graduate study where particular emphasis has been placed upon physical diagnosis, instruction in the handling of diseases of childhood and in preventive medical services. Of the 72 physicians practicing in these three counties, 56 have already bene-

fited from such post-graduate instruction courses.

While we realize that all counties will not be blessed with such financial support as to make available this type of instruction, at large medical centers, this Committee has arranged for the gradual extension of such post-graduate courses into the various counties of this state to be sponsored by the county or district medical society. Those who are interested may make application to the Secretary of the State Medical Society and arrangements will be completed so that desirable instructors can be provided for this purpose.

The Committee also feels that it is essential that the great majority of the local physicians should coöperate and manifest their interest by attending such medical conferences. Each local medical society has been requested to appoint a local public health committee whose function should be to inform all local doctors of the objective of such a program. If this is not done, it is difficult for the layman to differentiate between the physician who has prepared himself in accordance with a general group plan and the physician who is uninformed. In a large city as Detroit, it has been next to impossible to reach all physicians through such post-graduate conferences and consequently the county medical society with the coöperation of the local health department has employed a medical coördinator whose function is to reach the physician who is not wont to attend medical meetings.

This medical coördinator, in contacting the physician in his own office, has explained the nature of the program, has indicated that the latter has a definite function which he can perform in the furtherance of the community health work and that by his participation he minimizes the need of making available services through public clinics. Therefore, it is seen that the first step in the suggested program of medical participation is a stimulation of the interest of every practicing physician so that he becomes aroused to the desirabilities of his taking an active part by providing health service through his own personal practice in his own office. In this manner, each physician develops a definite personal knowledge of the entire plan, becomes familiar with the community health needs, and is ready to accept his responsibility.

With the adoption of such a group plan, the problem of carrying the story to the public becomes relatively simple. We have on one hand a prepared and qualified physician ready to serve the child by giving diphtheria immunization, smallpox vaccination, and periodic health examinations in his own office and we have on the other hand a parent serving as custodian of a growing child who is in need of a definite preventive service. The problem is to bring about a contact between their child and the parent and the physician. This necessitates a well defined program of health education which can be best handled through the agency of a full time local health service which has a sympathetic attitude towards its relationship with the medical profession.

Experiences in certain cities such as Detroit, St. Louis, Missouri, and Charleston, West Virginia, and in certain rural counties such as the three Michigan counties above referred to indicates that such a program may be carried on with advantage not only to the medical profession, but to the individual citizen and to the local public health organization. The means employed in carrying on this educational program will be discussed in the next communication sponsored by this Committee.

COMMITTEE ON PREVENTIVE MEDICINE,
MICHIGAN STATE MEDICAL SOCIETY.

YOU WANT TO KNOW

The federal relief program has brought about numerous regulations and procedures that affect practically every sphere of human activity. Its influence upon medical practice and care is of intense interest to every member. In previous issues we have imparted developments of the month. Important promulgations have been transmitted to County Societies in special bulletins. The American Medical Association through the *Journal of the A. M. A.* has been active in imparting information secured by the Association's representatives in Washington. All inquiries have been answered by personal letters or telegrams from the Secretary's office.

The A. M. A. and your State Society has been on the job constantly. Your state officers have maintained contact with our state commission and will continue to do so. The latest advices and information have been

transmitted in a Bulletin dated Jan. 10th to every county society. We have sought to keep you posted on what you wanted to know.

In the middle of December a disturbing rumor came in relation to a proposed plan of federal sickness insurance. What the eventuality would be we were uninformed. It was felt that we should be prepared. The Executive Committee was called to meet in Chicago in special session on Dec. 28th for conference with the executives of the A. M. A. The minutes of that meeting are published in this issue.

Dr. H. A. Luce and Dr. N. Sinai are now in England, where they were sent on a mission to secure evidence as to whether the application of the principles of health insurance had failed. They were sent on this mission by the State Society.

The minutes of the mid-winter session of the Council are published in this issue.

These statements and references are all that we can impart in answer to your "want to knows." It is felt that service has been rendered to every member.

PRACTICE RIGHTS OF CULTISTS

CHIROPRACTORS are not authorized to dispense or prescribe drugs and medicines;

OSTEOPATHIC physicians are authorized to dispense and prescribe drugs and medicines to relieve pain and suffering, but not for the purpose of the cure or relief of illness or disease;

EMERGENCY Welfare Relief funds may be used for services of chiropractors and osteopathic physicians only when such services are performed in compliance with the statute under which the practitioner is licensed.

January 5, 1934.

Mr. William Haber
Assistant State Relief Administrator
609 City National Building
Lansing, Michigan.

Dear Sir:

I have your letter of December 30 in which you ask certain information concerning the right of the Emergency Welfare Relief Commission to pay for the dispensing of drugs and the performing of surgical operations by osteopathic physicians and chiropractors.

The commission has no right to spend

any of its money for illegal purposes. It is, therefore, necessary for you to determine the right of a chiropractor or an osteopath physician to perform surgical operations or to prescribe and dispense drugs and medicines.

The rights of a chiropractor are defined by Sec. 6, Act No. 145, Public Acts of 1933. This section defines "Chiropractic" as "The locating of misaligned or displaced vertebræ of the human spine, the procedure preparatory to and the adjustment by hand of such misaligned or displaced vertebræ and surrounding bones or tissues."

It will be noted from the foregoing that a chiropractor is limited to an adjustment by hand of misaligned or displaced vertebræ and the surrounding bones or tissues. This does not permit the prescribing or dispensing of drugs or medicines or of the performance of surgical operations by a chiropractor. However, there can be no objection to the use of emergency welfare relief funds for the payment for services rendered by chiropractors so long as he keeps within the limits of his authority under Act No. 145, Public Acts of 1933.

See *Locke v. Ionia Circuit Judge*, 184 Mich. 535.

The practice of osteopathy is regulated by Act No. 162, Public Acts of 1903, being Sections 6757 to 6764, Compiled Laws of 1929. Sec. 4 of this act, being Section 8760, Compiled Laws of 1929, confers upon osteopaths the right to "practice Osteopathy in the state of Michigan in all of its branches as taught and practiced by the recognized schools or colleges in osteopathy, but which shall not authorize him to practice medicine within the meaning of Act No. 237, Public Acts of 1889, or acts amendatory thereto."

"Osteopathy" is defined by the Standard Dictionary as—

"A system of treating diseases without drugs. It is based on the belief that disease is caused by some part of the human mechanism being out of proper adjustment, as in the case of misplaced bone, cartilage, or ligament, adhesions or contractions, etc., resulting in unnatural pressure on or obstruction to nerve, blood or lymph."

Quoting *State v. Sawyer*, 36 Idaho, 814, 214 Pac. 222; *State v. Bonham*, 93 Wash. 489, 161 Pac. 377.

Webster's dictionary defines "osteopathy" as—

"A system of treatment based on the theory that diseases are chiefly due to deranged mechanism of the bones, nerves, blood vessels, and other tissues, and can be remedied by manipulations of these parts."

Quoting *re Rust*, 181 Cal. 73, 183 Pac. 548; *Waldo v. Poe*, 14 Fed. (2d) 749; *State v. Johnson*, 84 Kan. 411, 114 Pac. 390; *Arnold v. Schmidt*, 155 Wis. 55, 143 N. W. 1055.

Century Dictionary defines "osteopathy" as—

"A theory of disease and a method of cure***resting on the supposition that most diseases are traceable to deformation of some part of the skeleton (often due to accident) which by mechanical pressure on the adjacent nerves and vessels interferes with their action and the circulation of the blood."

"The practice (of osteopathy) consists principally in rubbing, pulling and kneading with the hands and fingers certain portions of the body and flexing and manipulating the limbs of those afflicted with disease, the object of such treatment being to remove the cause or causes of the trouble."

Little v. State, 60 Neb. 749, 51 L.R.A. 717; *Bandel v. New York*, 124 N.Y.S. 869.

"The practice of osteopathy is confined to the manipulation of the human body by applying the hands only to the body of the patient."

Medical Examiners v. Baudensdistel, 140 Atl. 886.

Thus the difference between the practice of medicine and surgery and the practice of osteopathy is clearly drawn. The one is the

cure of disease by the use of drugs, medicines or any therapeutic agent, the other is the cure of disease by means of manipulation with the hands of bones, nerves, blood vessels, and tissues.

This distinction is recognized by the legislature in the proviso contained in Sec. 4, Act No. 162, Public Acts of 1903 (Section 6760, Compiled Laws of 1929):

"Provided, that nothing in this act shall be construed to prohibit any legalized osteopathic physician in this state from practicing medicine and surgery after having passed a satisfactory examination before the state board of medical examiners in the state of Michigan."

On May 10, 1913, Grant Fellows, Attorney General, rendered an opinion to the effect that one licensed to practice osteopathy under the act of the legislature, Session of 1913, may not practice medicine and surgery. In that opinion he used the following language:

"The right that is conferred is solely that of practicing osteopathy as it is taught in various recognized schools and colleges. It will be noted that the privilege is not given to practice any other branch of medicine or surgery in which such schools or colleges may undertake to instruct its students. In other words, the fact that these institutions referred to in the act embrace in their course of study certain branches not included in what is commonly understood and denominated the practice of osteopathy does not confer upon the graduates thereof the right to practice anything except osteopathy under the act in question."

Since that opinion was written, the right of osteopaths to dispense narcotic drugs under the Harrison Narcotic Act has been twice before the United States District Court for the Eastern District of Michigan.

Bruer v. Woodworth, 22 Fed. (2d) 577; *Hostetler v. Woodworth*, 28 Fed. (2d) 1003.

In the *Bruer* case, Justice Dawkins presiding, said:

"It is proved by the applicant, and no contradictory evidence offered by the respondent, that all recognized schools of osteopathy teach anatomy, physiology, chemistry, toxicology, pathology, bacteriology, histology, neurology, diagnosis, obstetrics, gynecology, surgery, hygiene, etc., and that they have well-organized hospitals and clinics where nearly all of human ills are diagnosed and treated, although they give no internal medicine; that it is a part of their regular practice to handle obstetrical cases and others involving intense pain and suffering, where it is essential to afford temporary relief by the use of anesthetics. Besides, the provisions of the law above quoted affecting osteopathy in several places refer to them as 'osteopathic physicians.' It is true that section 6732 of the Compiled Laws of the State of Michigan of 1915 (Medical Practice Act) defines the practice of medicine in the state as follows:

"The term 'practice of medicine' shall mean the actual diagnosing, during or relieving in any degree, or professing or attempting to diagnose, treat, cure, or relieve any human disease, ailment, defect, or complaint, whether of physical or mental origin, by attendance or by advice, or by prescribing or furnishing any drug, medicine, appliance, manipulation or method, or by any therapeutic agent whatsoever."

"Yet, if this section were literally construed in its application to osteopaths, it would prevent them from 'diagnosing, during or relieving,' or professing or attempting to diagnose, treat, cure or relieve any human disease, ailment, defect, or complaint, whether of physical or mental origin, by attendance or by advice, or * * * appliance, manipulation or method.' This would make it impossible for them to pursue their profession."

In the *Hostetler* case, Judge Tuttle referred to and adopted the opinion of Judge Dawkins in the *Bruer* case.

In the case of *Mutual Life Insurance Co. of New York vs. Geleynse*, 241 Mich. 659, the court held that an osteopathic practitioner is a physician. "

Under the terms of the act regulating the practice of osteopathy, Act No. 162, Public Acts of 1903, an applicant for registration is obliged to pass "an examination as to his qualifications for the practice of osteopathy, which shall include the subjects of anatomy, physiology, chemistry, toxicology, pathology, bacteriology, histology, neurology, diagnosis, obstetrics, gynecology, surgery, hygiene, public health laws of Michigan, medical jurisprudence, principles and practices of osteopathy and such other subjects as the board may require."

Former Attorney General Fellows, in his opinion of May 10, 1913, calls attention to the fact that the statute does not authorize osteopaths to practice medicine or surgery except in compliance with the above quoted proviso, even though the same or some branches may be taught in osteopathic schools and colleges. But osteopathic physicians are authorized only to "practice osteopathy in all of its branches."

It is recognized by the courts (see the Bruer and Hostetler cases) that the use of drugs and narcotics has some part in the practice of osteopathy, especially in the relief of pain and suffering and temporary relief by means of anæsthetics, though osteopathic physicians do not attempt to cure disease by the use of internal medicine. They are not permitted to perform surgical operations nor to dispense drugs and medicines except for the purpose of relieving pain and suffering and temporary relief by means of anæsthetics, in connection with their practice of osteopathy.

It is my opinion that osteopathic physicians may prescribe and dispense drugs and medicines, including narcotics and anæsthetics, for the relief of pain and suffering in connection with the practice of osteopathy and that when so used, Emergency Welfare Relief funds may be used for the payment thereof; but that osteopaths have no right to perform surgical operations or to prescribe or dispense drugs and medicines for the relief or cure of any illness or disease, and Emergency Welfare Relief funds should not be used for the payment of such services.

Very truly yours,

P. H. O'BRIEN, *Attorney General.*

MINUTES OF THE SPECIAL MEETING OF THE EXECUTIVE COMMITTEE OF THE COUNCIL OF THE MICHIGAN STATE MEDICAL SOCIETY

1. In response to the special call of the Chairman, the Executive Committee of the Council of the Michigan State Medical Society met in Chicago at the headquarters of the American Medical Association at 10:00 A. M. on Thursday, December 28, 1933. There were present:

B. R. Corbus, Chairman, Henry Cook, F. A. Baker, C. E. Boys, H. A. Luce, Henry R. Carstens, Geo. L. LeFevre, President, R. R. Smith, Pres.-Elect, J. D. Bruce, University of Michigan, W. H. Marshall, Nathan Sinai of the Committee on Economics, F. C. Warnshuis, Secretary.

2. Chairman Corbus made an opening statement that the special meeting had been called because of an urgent request from the Committee on Medical

Economics that an appropriation be made in order that Dr. Nathan Sinai and Dr. H. A. Luce might sail during the early part of January for London, England, for the purpose of securing authentic information relative to the endurance or the failure of the principle of Health Insurance as operating in England. The Committee on Economics had reached the point in its deliberations and work, under the instructions of our House of Delegates, where it was imperative that these facts be established in order that the Committee might be guided in the further conduct of its investigations, studies and recommendations.

The Chairman further stated that before authorizing such a mission to England it would be advisable to definitely ascertain by conference with the officials of the American Medical Association headquarters whether this information was not obtainable at our Chicago headquarters or elsewhere in this country.

The Chairman further stated that the Secretary had attended a special meeting of the Executive Committee of the American Medical Association that was held in Chicago on December 27 and that he had arranged for an interview and that interview had been held, at which there were present—Dr. J. H. Upham, Chairman of the American Medical Association's trustees, Dr. Olin West, Dr. C. B. Wright of Minneapolis, A. M. A. Trustee, Dr. Crockett of Lafayette, Indiana, Member of the A. M. A. Legislative Committee, Dr. Cary, Chairman of the A. M. A. Legislative Committee and Past President of the A. M. A., Dr. Leland of the Bureau of Economics of the A. M. A., Dr. W. A. Woodward of the Bureau of Legal Medicine and Legislation of the A. M. A., Dr. B. R. Corbus, Dr. J. D. Bruce and Dr. F. C. Warnshuis. That a frank discussion was held relative to the problem presented by the Committee on Economics and also relative to the medical features of Federal Emergency Relief and other government Commissions and Agencies.

The Chairman also stated that the Secretary had arranged that at this meeting of the Executive Committee there would be available the headquarters' personnel for consultation.

3. At this time Drs. Olin West, Woodward, Leland and Cary entered the meeting and participated in the deliberations.

4. Dr. W. H. Marshall, Chairman of the Committee on Economics, and Dr. Nathan Sinai, Director of the Studies of the Committee on Economics, were called upon and made a statement as to the actions and requests and views of Michigan's Committee of Economics.

5. Following the foregoing statements there was a general discussion, participated in by Drs. West, Woodward, Leland, Cary, Marshall, Bruce, Baker, Luce, Carstens, President LeFevre and President-Elect Smith. During this discussion many questions and many subjects were brought forth and statements were presented regarding the activities that were being pursued and pressed by the A. M. A. in compliance with instructions from the Board of Trustees and the House of Delegates of the A. M. A.

At 1:00 P. M. the Committee recessed for luncheon in the headquarters building.

6. The Executive Committee reconvened at 1:45 in executive session. There was a frank and full discussion and review of the subjects and replies that had been secured during the morning session.

It was the opinion that the A. M. A. would not resent the proposed action on the part of the Michigan State Medical Society. It was further generally accepted that at the present time dependable evidence was not available to refute a statement that

the principles of medical insurance were failing in Europe and in England.

It was further stated that the expenses of the mission to England would be in the neighborhood of \$1,400 and that \$350 of this amount would be paid by the American College of Dentistry, the balance to be paid from the \$7,500 fund that was to be received for the work of the Committee on Economics and that the expenses of the mission would not be charged to the operating fund of the State Medical Society.

It was further agreed that it would be highly desirable that Dr. Sinai be accompanied by a representative member who is in active bedside practice and who was not connected with any institution, hospital or public health organization.

7. It was moved by Dr. Baker and supported by Dr. Cook that the Executive Committee approve the request of the Committee on Economics and that Dr. H. A. Luce and Dr. Nathan Sinai be authorized to go to England for the purpose of securing the facts that were deemed desirable and as had been outlined in the conference and discussions.

8. It was moved by Cook-Carstens that the Council of the Michigan State Medical Society be requested at its meeting January 15 to determine an honorarium for Dr. H. A. Luce that would in part compensate him for time lost from his practice during his absence.

9. It was moved by Cook-Boys that the Chairman of the Council, President LeFevre and President-Elect Smith, confer with Dr. Olin West immediately upon adjournment and advise him as to the action that had been taken by the Executive Committee and the spirit that governed this action and the sending of our mission to England.

10. The Executive Committee adjourned at 3:15 P. M.

F. C. WARNSHUIS, *Secretary.*

MEDICAL RELIEF UNDER FERA IN KENT COUNTY

By PAUL W. KNISKERN, M.D., Medical Director

Prior to the operation of the Federal Emergency Relief Administration in Grand Rapids, city indigent patients were given medical care in a central clinic and at home by a small group of physicians on salary. This organization was equipped to operate at a very low cost per patient. Then came federal and state regulations with provisions for re-establishing family-physician relationships and payment of individual fees for services. The entire medical relief outside the hospitals was of necessity assumed by the Relief Commission, and the question arose as to whether the precepts set forth in Federal Bulletin No. 7 of the Emergency Relief Administration must be set up in their entirety or whether "existing clinics should continue." A ruling was obtained from the State Relief Administration to the effect that the work might continue as in the past, but that the local commission was empowered to adopt any course which would not greatly increase the cost.

So a compromise arrangement has been adopted, and during its rather brief existence has been found satisfactory enough to warrant its publication in the hope that some of the ideas embodied may be helpful elsewhere during this difficult transition period.

Within the city limits of Grand Rapids all patients needing care that can be rendered in a clinic are required to come to the central clinic. At present the work is divided up as follows: a general medical clinic operated by a rotating group of practitioners;

surgical, gynecological, pre- and post-natal, eye, ear, nose and throat, diabetic, rectal, and dental clinics operated by specialists on salary. The City Health Department operates a venereal and a tuberculosis clinic. A pharmacy is maintained, using standard drugs purchased in large amounts at minimum cost. The director's office is always open for authorization of medical care, using a file kept up-to-date with the welfare office.

House calls are given out to the physician of the patient's choice, the family placing the call at the central office, where it is checked against the file and relayed to the doctor. Confinement cases are handled in the same manner. We are paying the maximum fee allowed by the State Administration—\$1.50 for day calls, \$2.50 for night calls, and \$15 for confinements in homes. It is our impression that patients are being better cared for than under the former system, and they are unquestionably much happier about it. People are anxious to have their own physician for acute illnesses, serious chronic illnesses, and confinements, but usually content to have minor ailments treated in the clinic. Clinic visits outnumber house calls two or three to one, and if private office calls were allowed, the disproportion would undoubtedly be much greater, so a large saving is effected by continuing the clinic.

Outside the city, patients are allowed free choice of physicians in their vicinity for office work as well as house calls. Authorization for such services is either through the director's office or directly from the social visitor. This also applies to dental work. Patients may be sent to the clinic for special examinations.

The reporting of home visits is done by means of small blanks with space for a brief medical report, which also serve as charge slips. These are all copied into the patient's chart in the director's office.

Our laboratory work is done at the local branch of the Michigan State Laboratory. X-ray work is sent to private or hospital laboratories. When cases require hospital care they are referred to the city or county physicians until their discharge.

Nursing service is furnished in the city by the Bureau of Public Health Nursing, a part of the Health Department, without cost to the Relief Commission. In the metropolitan area surrounding Grand Rapids, an arrangement has been made with the Community Health Service, which is in part supported by community chest funds, to give care on a fee basis as established by the state regulations.

The number of home calls has not increased appreciably over that of a year ago, when people did not have their choice of physicians. The total increase of cost of medical relief brought about by this change in policy will probably amount to little more than 20 per cent. It is with considerable satisfaction that the writer is able to report that any attempts of physicians in this county to make unnecessary calls is negligible, that on the contrary many men are rendering more service than they are charging for, and evincing an interest in their patients' welfare far out of proportion to the pecuniary returns involved.

THIRD HONOR

Goes to Shiawassee County Medical Society for 100% payment 1934 Dues.

Minutes of the Mid-Winter Meeting of the Council of the Michigan State Medical Society

1. The Council of the Michigan State Medical Society convened in Mid-Winter session at the Statler Hotel in Detroit on January 15, 1934, at 1:00 P. M. with the Chairman, Burton R. Corbus, presiding.

There were present—Cook, Powers, Perry, Urmston, Boys, Corbus, Treynor, Carstens, Manthei, Van Leuven, Heavenrich, Baker, Brunk, McIntyre, Cummings and Hafford—16.

Absent—H. H. MacMullen—1.

There were also present, President Geo. L. LeFevre, President-Elect R. R. Smith, Editor J. H. Dempster, Treasurer Wm. A. Hyland, W. J. Stapleton, Jr., J. B. Bradley and the Secretary.

2. The minutes of the meeting of the Executive Committee since the Annual Meeting in September, 1933, were presented. Upon motion of Powers-Boys these minutes were adopted and made a part of the records of the Council.

3. Upon motion of Councilor Brunk, supported by Councilor Urmston, Doctor F. A. Baker was elected Chairman of the Publication Committee. The Chairman named as the other members of the Publication Committee, Councilors Brunk and McIntyre.

4. The Secretary presented the following as his annual report:

SECRETARY'S ANNUAL REPORT

1933

To the Council,
Gentlemen:

I have the appreciated honor to present to the Council and through your body to the membership my annual report as Secretary for the year 1933.

FINANCES

Your Auditor's financial report, together with itemization of income and expenditures are submitted herewith. Comment:

When consideration is given to the fact that \$5,543.66 was expended on the Survey Committee's program and \$2,538.80 on legislative work—an excess of \$4,332.46 over our original budget appropriations for these two activities—then our net operating loss of \$2,080.43 for the year is a satisfactory showing.

Our Journal subscriptions, advertising sales and reprint sales produced \$11,582.61. That was \$1,000 less than the estimated advertising income and about \$200 less subscription income. The total Journal expenses were \$10,217.55, giving a Journal profit of \$1,365.06. Against this figure should be charged a percentage of postage, stenographic expense and secretary's service which would reveal the Journal

as having closed the year with income and expense balanced.

Itemization of all expenditures is appended to this report.

BUDGET FOR 1934

The following Budget is submitted for 1934:

INCOME

3,200 Members @ \$8.75.....	\$28,000.00
Interest	1,200.00
	<u>\$29,200.00</u>

APPROPRIATIONS

Defense Fund @ \$1.50.....	\$ 4,800.00
Journal Subscription @ \$1.50.....	4,800.00
Rent, Phone and Light.....	1,400.00
Annual Meeting.....	750.00
Post Graduate Conferences.....	750.00
Committee Expenses.....	500.00
Legislative Committee.....	3,000.00
Council Expense.....	1,200.00
Postage	450.00
Delegates to A. M. A.....	500.00
Stenographic	2,500.00
Society Expense	1,500.00
Secretary's Salary.....	
Contingent Fund.....	6,050.00
	<u>\$28,200.00</u>

JOURNAL BUDGET

Income

Advertising	\$ 6,000.00
Subscriptions	4,800.00
	<u>\$10,800.00</u>

Expenses

Printing	\$ 7,000.00
Editor's Expenses.....	600.00
Postage	50.00
Editor's Salary.....	
Reserve	3,150.00
	<u>\$10,800.00</u>

MEMBERSHIP TABULATION

County	1932	1933	Loss	Gain	Un- paid	Deaths
Alpena	14	16	....	2	....	....
Antrim-Charlevoix- Emmett-Cheboygan.....	30	34	....	4	2	....
Barry	13	14	....	1	....	....
Bay-Arenac-Iosco	62	61	1	....	4	1
Berrien	41	42	....	1	3	....
Branch	13	11	2	....	3	....
Calhoun	110	109	1	....	10	....
Cass	12	12	....	....	....	2
Chippewa-Mackinac.....	17	17	....	....	....	....
Clinton	12	11	1	....	2	....
Delta	23	20	3	....	3	....
Dickinson-Iron	19	18	1	....	1	....
Eaton	23	26	....	3	....	....
Genesee	133	137	....	4	13	....
Gogebic	26	24	2	....	3	....
Grand Traverse- Leelanau	28	27	1	....	3	....
Gratiot-Isabella- Clare	28	32	....	4	....	1
Hillsdale	20	20	....	....	1	....
Houghton-Baraga- Keweenaw	39	38	1	....	3	....
Huron	9	9	....	....	1	....
Ingham	87	98	....	11	1	1
Ionia-Montcalm	34	33	1	....	1	....
Jackson	71	65	6	....	9	....
Kalamazoo	120	132	....	12	2	2
Kent	229	209	20	....	29	....
Lapeer	16	17	....	1	....	....
Lenawee	34	30	4	....	5	....
Livingston	11	19	....	8	1	....
Luce	10	9	1	....	1	....
Macomb	33	34	....	1	4	....

Manistee	15	15	---	---	---	---
Marquette-Alger	35	35	---	---	2	---
Mason	8	9	---	1	1	---
Mecosta	20	19	1	---	1	---
Menominee	10	11	---	1	---	---
Midland	8	9	---	1	---	---
Monroe	33	32	1	---	4	---
Muskegon	64	67	---	3	---	2
Newaygo	10	11	---	1	1	---
Oceana	9	11	---	2	---	---
Oakland	95	101	---	6	6	---
Otsego-Montmorency-Crawford-Oscoda-Roscommon-Ogemaw	13	15	---	2	1	---
Ontonagon	5	6	---	2	1	---
Ottawa	30	32	---	2	1	---
Saginaw	75	78	---	3	5	---
Sanilac	11	10	1	---	2	---
Schoolcraft	5	5	---	---	---	---
Shiawassee	27	25	2	---	2	1
St. Clair	41	38	3	---	3	---
St. Joseph	17	18	---	1	2	---
Tuscola	22	29	---	7	2	---
Washtenaw	124	135	---	11	17	---
Wexford-Kalkaska-Missaukee-Osceola	21	20	1	---	2	---
Wayne	1264	1105	159	---	293	6
	3279	3160	213	94	450	16
	3160		94			
TOTAL LOSS—1933	119		119			

The foregoing tabulation is a most inspiring exhibit. Our members have been sorely pressed by reason of financial reverses, impounding of their bank deposits and lessened income. They have in many instances made personal sacrifices to retain affiliation. This evidenced support has been materially accomplished by reason of the activities of the officers of county societies to whom unstinted credit is cheerfully given.

This recorded membership loyalty has been a constant inspiration to your Secretary. Diligent effort has been made to record appreciation by intensified increasing activity to secure for each member the greatest amount of membership benefits and to enhance a member's personal welfare and interest.

It must not be forgotten that medical organization has been and will continue to be the most powerful influence in the protection and maintenance of the personal interests of the individual physician. We must deal collectively with the exploitation of medicine and demand the economic security of the individual physician.

DEATHS

E. A. Hoyt	Bay City
Geo. W. Green	Dowagiac
Alex B. MacNab	Cassopolis
Rayburn B. Smith	Alma
John G. Rulison	Lansing
A. J. Foelsch	Gobles
H. A. Nex	Allegan
Robt. I. Busard	Muskegon
Anson A. Smith	Muskegon
J. S. Shoemaker	New Lathrop
J. Hamilton Charters	Detroit
Ray Connor	Detroit
E. M. Currie	Detroit
L. W. Haynes	Detroit
Samuel Kahn	Detroit
Homer E. Safford	Detroit

The foregoing members passed on to the "great adventure." We record their names in our archives. We pause to honor them, fully realizing that they erected their own monument by their deeds and service to mankind.

ANNUAL MEETING

By reason of the interest manifested, our plan of morning section meetings and afternoon general scientific meetings warrants continuation.

Concern is expressed, however, for the General Session held on the first evening, at which the president and an invited guest deliver addresses. For several years the attendance at this general session has been extremely small. At a recent one there were less than 200 present and the majority were lay people.

The following suggestion is presented for consideration:

That on the first day the Scientific Sections convene at 9:00 A. M. and adjourn at 10:45 A. M. The members then to convene in General Session, at which time the President will deliver his annual address. The Sections to reconvene at 1:30 P. M. These to be followed by an evening clinical demonstration session with case presentation. Such a program would appeal to a large number of members and be of material benefit. I append the recommendation of Section Officers.

POST GRADUATE CONFERENCES

In cordial coöperation with the Department of Post Graduate Medicine of our University, unexcelled opportunities for post graduate study exist and are being extended for our members. Our Society is deeply indebted to Doctor J. D. Bruce for his sustained, intensified activities in establishing and developing these study opportunities at the University and in Detroit. We can already declare that there is now in operation a school of graduate medicine providing courses comparable to any and in many instances excelling those of other clinical teaching centers. With the objectives formulated, it will be but a comparatively short time before the University's Post Graduate Department of Medicine will be the outstanding one in the nation. A greater realization of the value of this asset, so valuable to our membership, should be stressed to all medical men. Our Society is fortunate in being able to be a coöperating factor in this educational activity.

We recognize that adequate medical care can come only from adequately prepared and trained medical men. We further recognize that medical men can remain adequately prepared only by sustained post graduate work and that every doctor should be encouraged to embrace these opportunities by devoting a certain amount of time each year in attendance upon the courses that are arranged for him. It is an obligation of our Society to aid in providing graduate instruction and to urge our members to avail themselves of these facilities that are in operation at their very doorstep. To that end your Secretary requests that he be authorized to co-operate with the Director of Post Graduate Medicine of the University in presenting these facts to our members and in urging attendance as well as in arranging courses in Ann Arbor and Detroit and in the furtherance of Regional Post Graduate Conferences.

COUNTY SECRETARIES CONFERENCE

The recommendation is made that your Secretary be authorized to arrange for the annual Conference of County Secretaries at a time during the early spring months, to be approved by the Executive Committee. That actual travel expenses, and, when necessary, hotel expenses be authorized.

These conferences are of distinct value and material aid in maintaining county society activities.

SURVEY COMMITTEE

The work of this Committee has been imparted through its report and through the action of our House of Delegates. As a matter of record the following itemization of expenditures of society funds is imparted.

1931	\$ 108.90
1932	4,484.88
1933	5,623.08
Total	\$10,216.86

ECONOMICS COMMITTEE

The House of Delegates has created a Committee on Economics to continue the studies of the Survey Committee and to apply its recommendations if funds could be secured to defray expenses. The Economics Committee is now composed of seven members.

Following an expenditure of \$10,216.86 of society reserve funds in defraying the expenses of the Survey Committee, the Society was in no financial position to finance the expenses of the work of the Committee on Economics. The House of Delegates directed that no further funds of the Society be expended. It was, therefore, necessary to seek funds in the form of contributions from acceptable sources.

Your Secretary has the honor to report the receipt of a check of \$3,500 on January 6, 1934, together with a promise of \$1,000 per month for four months, from Mr. Tracey W. McGregor of Detroit for the purpose of defraying the expenses of the Society's Economic studies.

Absolute and sole credit for the presentation of our needs and the securance of this contribution belongs to Doctor J. D. Bruce.

As Councilor, Chairman of the Publication Committee, Member of the Executive Committee and Director of Post Graduate Work, Doctor Bruce served our Society for a period of ten years. He gave much of self and time in furthering our Society's activities and developing sound policies. In October, 1933, he presented his resignation because of the demand of the University for an increased amount of his time. Doctor Bruce, however, promised a continuation of service and interest in our activity and problems. He now verifies that promise in the securance of this contribution and merits a warm expression of thanks and appreciation.

The Council will certainly voice, in suitable form and by appropriate action, the Society's expressions of appreciation and thanks to the donor, Mr. McGregor, and to Doctor J. D. Bruce for having made possible the continuation of the work of our Committee on Economics.

COMMITTEES

Our Society is indebted to the members constituting our Committees. These members are unselfish in their contribution of time and self in furthering activities.

Outstanding is the work being done by the Committee on Preventive Medicine. Its program merits the active and aggressive support of every county unit. The accomplishment of the Committee's objectives will record one of the greatest achievements of our Society. It will materially enhance every member's interest.

The Committee on Drugs and Therapy is performing a commendable service.

Our legislative interests are in the hands of a reliable Committee in whom every confidence can be placed.

There is every indication that our activities delegated to Committees will be outstanding.

The State Secretary's office and all its facilities are made available to every Committee and intensive coöperation is constantly subscribed.

WOMAN'S AUXILIARY

It is a pleasure to report that the present officers of the Woman's Auxiliary are sponsoring a renewed program of helpful assistance.

SUPPLEMENTAL REPORTS

There are appended to this report supplemental reports upon the special subjects of Group Insurance and Legislation which your Secretary was directed to investigate.

EMERGENCY WELFARE MEDICAL RELIEF

The activities of this office in the problems presented by the Emergency Welfare Relief Commission have been reported in the December and January Journals. Your Secretary was the recipient of over two hundred inquiries from County Societies and County Committees. A very material increase of work was created by these problems.

Current events, governmental plans and administrative policies directed toward overcoming the depression and unemployment are beginning to involve medical care and medical practice in a serious manner. Bulletin No. 7 creating regulations for medical care for Welfare Relief was soon followed by the CWA plan. Individuals placed upon CWA rolls were removed from relief rolls and no provision was made for their medical needs. CWA workers were shortly declared as entitled to Compensation Relief in case of accident or injury. The declaration of this policy was shortly followed by a proposal to enlist a corps of doctors to render compensation services at given fees.

Then came the information that these alphabetical plans were to be developed upon a five or possibly ten year basis. But a few days elapsed when a "tip" came through that a plan for Governmental Health Insurance was in the making and would eventually be promulgated.

We are uninformed as to the identity of the individual or group of individuals who are initiating these movements for the socialization of medicine and medical care. Whoever they are, they are apparently embracing this period of unrest and confusion for the purpose of inaugurating these social movements. If they succeed, under the plea of an existing emergency, when the emergency is past they will have instituted Bureaus, officials and programs that will be difficult to discontinue. They will become permanent agencies under governmental, political and lay control.

Breaks are coming fast. A new plan is quickly followed by another with more startling and radical provisions. No opportunity, no hearings are accorded for protest or discussion. Representatives of medicine are not consulted. A plan is proposed, regulations are drawn up, someone attaches a signature of approval and it is in effect as a government measure. It is sent to State and County Commissions and put in force.

The American Medical Association has had personal representatives in Washington for many weeks for the purpose of imparting guiding advice to federal officials and to aid in preventing the promulgation of adverse and unwarranted regulations that involve the health and medical care of the people. Apparently little heed is being given to the facts presented.

Your State officers are in close contact with State Commissions and Administrators, with discouraging results. The reply is always that instructions come from Washington and that they have no alternative than to follow and obey them.

These conditions have drawn heavily upon this office and have consumed time and effort to a large degree. The quest has ever been to make represen-

tation in behalf of our members' interests and to join with sister states and the American Medical Association in presenting facts and imparting advice. At this writing there is no fixed federal policy. Changes are announced daily which present new problems. We shall seek to keep our members informed through the JOURNAL and Bulletins to County Officers.

Members should remember that to advise, to ask or to recommend is not followed by federal officials' approval. We seek to exercise wholesome guiding influence but that does not imply that our representations will be complied with or adopted. We are in a changing state of events, the end results of which no one is able to forecast. Organization is, however, not unmindful of its obligations. It is seeking to conserve the profession and the public's health interests and it is accomplishing results far more satisfactory than would have resulted had organizational prestige and influence been dormant. Individual effort would have been wholly unavailing.

OFFICE ADMINISTRATION

For record purposes your Secretary cites the increasing volume of correspondence. An average of twelve letters a day are received from members and lay persons seeking information and advice. This is indeed inspiring. We welcome these inquiries for they enable us to establish the Society as a reliable source for information. We desire to increase this recognition on the part of the public as well as by our members.

Your Secretary has diligently endeavored to cause his office to be of the greatest possible assistance to our members, and each county unit. To special and permanent committees there has been given every possible aid. Our records and files are indexed to date and compose a valuable reference division.

The business details related to the JOURNAL have been executed with a view towards efficiency.

Insofar as existing engagements have permitted, your Secretary has attended many county and district meetings.

The time devoted to administrative details and duties has exceeded by many hours those commonly accepted as constituting full time service. At times we were confronted with most trying circumstances, problems and perplexities, occasioned by social, professional and economic events. I am deeply grateful for the advice and assistance given by officers, committees and members in determining action. Rarely did I seek to assume individual or unadvised responsibility and action. To serve and to achieve by serving has been my sole purpose.

In closing this, my twenty-first annual report, I am unable to summarize adequately my personal expressions of gratefulness for the confidence that has been reposed in me. I deeply appreciate the privileges and opportunities of having been privileged to serve.

In spite of the upheaval that is manifesting itself, in spite of the unrest that exists, I have full and abiding faith for the future and the independent role that will be retained by our profession in serving humanity. As long as we individually and collectively render adequate medical service and remain proficient, as long as we hold fast to our ideals, as long as we are not turned aside by a quest for temporary financial returns, as long as we are true to our science, then will our science care for us and we shall retain our independence, and medicine and its disciples will be in an honored, commanding position in social and governmental life.

Respectfully submitted,

(Signed) F. C. WARNSHUIS, *Secretary*.

SOCIETY EXPENSE—1933

January			
Barlow Bros.	\$	15.00	
G. R. Trust Co. Dep. Box.		5.50	
H. W. Ten Broek & Sons.		50.00	
Postal Tel. & Cable		3.11	
Long Distance Calls		1.65	
Western Union Tel. Co.		1.62	
R. V. Allen		1.25	
Old Kent Bank—Int. on Note		16.79	
Tisch-Hine Company		5.00	
			\$ 99.92
February			
49 Checks—Charge	\$	.98	
F. C. Warnshuis		17.85	
F. C. Warnshuis		15.41	
Old Kent Bank—Int. on Note		40.73	
			74.97
March			
23 Checks—Charge	\$	.46	
Taylor's		7.95	
H. W. Ten Broek & Sons.		27.50	
Addressograph Sales Agency		3.56	
Postal Tel. & Cable Co.		2.52	
W. B. Newton		30.23	
R. S. Anderson		10.22	
F. A. Baker		21.19	
C. W. Colwell		12.84	
A. F. Fischer		56.04	
J. F. Carrow		14.00	
Geo. M. Kest		23.64	
F. C. Warnshuis—Pantlind Hotel		129.80	
Bixby's		2.15	
Addressograph Sales Agency		2.96	
Postal Tel. & Cable Co.		5.28	
J. M. Robb		35.53	
D. W. Fenton		9.83	
F. C. Warnshuis		7.32	
Sec'y Conference		7.00	
E. C. Hansen		17.93	
E. F. Sladek		21.03	
E. J. Evans		56.04	
John Burkart		6.96	
J. J. McCann		4.20	
L. W. Switzer		15.00	
M. E. Stone		4.80	
E. M. Highfield		9.24	
L. L. Savage		22.20	
S. Martin Tweedie		25.80	
W. E. Ward		8.86	
L. F. Foster		16.80	
R. J. Hubbell		6.00	
Florence Ames		14.94	
E. J. Brenner		19.76	
E. C. Baumgarten		13.00	
R. H. Alter		12.50	
Jos. N. Scher		12.50	
E. J. Dougher		18.15	
T. Y. Ho		7.48	
Harry B. Knapp		10.20	
R. L. Finch		7.56	
F. L. S. Reynolds		46.14	
W. C. Ellet		9.60	
C. G. Clippert		24.00	
Geo. F. Swanson		31.34	
W. B. Bloemendal		4.20	
Taylor's		12.95	
Ward-Schopps		7.50	
			876.80
April			
8 Checks—Charge	\$	.16	
Addressograph Sales Agency		1.88	
Paul Kniskern		25.20	
Taylor's		3.70	
Postal Tel. & Cable Co.		1.88	
Long Distance Calls		5.75	
F. C. Warnshuis		9.06	
Old Kent Bank—Int. on Note		26.17	
			73.80
May			
86 Checks—Charge	\$	1.72	
F. C. Warnshuis		3.60	
Bruce Publishing Co.		18.42	
Addressograph Sales Agency		3.03	
Long Distance Calls		2.90	
Rogers Leather Goods Store		4.50	
Philip Riley		4.00	
Young & Chaffee—Storage		12.00	
Bruce Publishing Co.		9.60	
			59.77
June			
34 Checks—Charge	\$	.68	
Taylor's		10.75	
Secretary of State		2.00	
Master Reporting Co.		103.46	
Ernst & Ernst		167.82	
Postal Tel. & Cable Co.		1.55	
Western Union Tel. Co.		5.11	
J. M. Robb		38.95	
Long Distance Calls		16.65	
Old Kent Bank—Int. on Note		19.50	
			366.47

July		
34 Checks—Charge.....	\$	.68
Coupons Returned—Charge.....		.23
Addressograph Sales Agency.....		1.42
F. C. Warnshuis.....		5.28
J. D. Bruce (Sawyer Tablet).....		30.42
Tailors		5.94
Long Distance Calls.....		10.10

August		
35 Checks—Charge.....	\$	.70
Long Distance Calls.....		2.20
Addressograph Sales Agency.....		2.04
F. C. Warnshuis.....		10.90
Master Reporting Co.....		88.05
J. M. Robb.....		48.11
Western Union Tel. Co.....		.55
Tailors		6.96
U. S. Laundry.....		3.84
F. C. Warnshuis—Upper Peninsula		97.82

September		
32 Checks—Charge.....	\$	.64
Michigan Surety Co. Notary Bond		5.00
Columbian Whse.....		12.00
G. R. Insurance Agency.....		62.50
Detroit Clipping Bureau.....		3.65
Addressograph Sales Agency.....		1.14
Western Union Tel. Co.....		2.26
Tailors		6.29
Tisch-Hine Co.....		2.58
H. R. Terryberry Co.....		102.60
Long Distance Calls.....		5.45

October		
21 Checks—Charge.....	\$	.42
Old Kent Bank—Int. on Note.....		37.50
Emily Graversen's Notary App.....		1.50
Arthur Renslund.....		1.00
Harold C. Mack.....		50.37
G. R. Trust Co.—Box.....		5.50
Detroit Clipping Co.....		10.80
Western Union Tel. Co.....		3.18
Tailors		8.86
F. C. Warnshuis.....		19.62

November		
48 Checks—Charge.....	\$	.96
Long Distance Calls.....		7.10
Bruce Publishing Co.....		111.35
Tisch-Hine Co.....		1.22
Ward-Schopps Co.....		11.33
Detroit Clipping Bureau.....		1.30
The Forbes Co.....		3.61
Addressograph Sales Agency.....		3.37
W. H. Kessler Co.....		11.43
Western Union Tel. Co.....		8.10
Postal Tel. & Cable Co.....		1.10
U. S. Laundry.....		.88
F. C. Warnshuis.....		35.00

December		
30 Checks—Charge.....	\$	.60
Long Distance Calls.....		3.95
F. C. Warnshuis.....		15.72
Kessler Office Supplies.....		17.95
Western Union Tel. Co.....		9.98
Postal Tel. & Cable Co.....		.82
Addressograph Sales Agency.....		6.32
F. C. Warnshuis.....		42.42
Detroit Clipping Bureau.....		5.05
Bruce Publishing Co.....		19.91
Long Distance Calls.....		1.02
F. C. Warnshuis.....		9.48
Emily Graversen.....		7.00

POST GRADUATE CONFERENCES EXPENSES—1933			
March			
The Camera Shop.....	\$	18.50	
F. C. Warnshuis.....		25.00	
			\$ 43.50
April			
Robert C. Moehlig.....			10.00
May			
G. J. Curry.....	\$	9.50	
Frank Wilson		12.00	
Mrs. Dorothy Waller.....		12.00	
Robert Novy.....		12.00	
E. D. Spalding.....		12.00	
Norman Miller.....		10.50	
A. C. Furstenberg.....		10.50	
A. C. Curtis.....		10.50	
H. H. Riecker.....		10.50	
			99.50
June			
Harther L. Keim.....	\$	23.85	
Camera Shop.....		3.45	
Theo. Heavenrich.....		3.90	
			31.20
September			
Drs. Brown & Kretzschmar.....			94.55
			\$ 278.75

ECONOMICS COMMITTEE EXPENSE—1933			
November			
The University of Michigan Union.....	\$		7.88
December			
F. C. Warnshuis.....		2.58	
Philip Riley		15.15	
			17.73
			\$ 25.61

COUZENS FOUNDATION		
	Credit	
Balance from 1932.....	\$	39.37
		138.75

JOINT COMMITTEE RECEIPTS AND DISBURSEMENTS—1933			
Receipts			
Balance from 1932.....			\$1,813.44
January			
Detroit News	\$	76.92	
Detroit News		76.92	
			153.84
March			
Detroit News			96.15
April			
Detroit News			76.92
May			
Detroit News	\$	76.92	
Detroit News		76.92	
			153.84
June			
Detroit News			96.15
July			
Detroit News			76.92
August			
Detroit News			96.15
September			
Detroit News			76.92
October			
Detroit News			76.92
November			
Detroit News			96.15
			140.22
			\$2,546.80

EXPENSES—1933							
	Editor			Reprint		Stenog-	
	Salary	Expense	Rent	Postage	Expense	Secretary	raphers
January.....	\$ 208.00	\$ 50.00	\$ 100.00	\$ 20.00	\$ 9.20	\$ 333.00	\$ 210.00
February.....	208.00	51.28	132.60	30.00		333.00	100.00
March.....	208.00	50.00	116.00	45.00		330.00	275.00
April.....	208.00	50.00	116.00	44.45	420.45	336.00	165.00
May.....	208.00	50.00	116.00	21.89	68.70	333.00	165.00
June.....	208.00	50.00	116.00	30.00	128.50	333.00	165.00
July.....	200.00	58.00	116.00	20.00	33.15	333.00	165.00
August.....	200.00	58.00	116.00	38.00	51.10	333.00	75.00
			Tel. 2.20				
September.....	200.00	58.00	116.00	20.00	189.35	333.00	75.00
October.....	200.00	58.00	116.00	90.00		333.00	75.00
November.....	200.00	58.00	116.00	40.00	82.35	333.00	111.00
			Tel. 7.10				
December.....	252.00	58.00	123.40	33.00	12.90	337.00	158.00
	\$2,500.00	\$649.28	\$1,409.30	\$432.34	\$995.70	\$4,000.00	\$1,739.00

Less: \$9.30 which were Tel.
calls posted to rent in
error

9.30

\$1,400.00

Disbursements	
March	
Salaries	\$175.00
Salaries	175.00
Mayer-Schairer Co.....	21.00
Don C. Lyons.....	38.00
Salaries	175.00
	\$ 584.00
April	
Salaries	175.00
May	
Salaries	175.00
June	
Salaries	175.00
July	
Salaries	\$175.00
J. D. Bruce.....	51.88
	226.88
August	
Salaries	175.00
September	
Salaries	175.00
October	
Salaries	\$175.00
The Mayer-Schairer Co.....	4.64
Don C. Lyons.....	48.00
	227.64
November	
Salaries	175.00
December	
Salaries	175.00
	\$2,263.62
Receipts	\$2,813.40
Disbursements	2,263.52
Balance	\$ 549.88

DELEGATES TO AMERICAN MEDICAL ASSOCIATION EXPENSES—1933

June	
L. J. Hirschman.....	\$ 26.86
C. S. Gorsline.....	43.42
Carl F. Moll.....	47.21
H. A. Luce.....	46.25
L. J. Hirschman.....	20.00
	\$ 183.74
July	
J. D. Brook.....	33.35
	\$ 217.09

PREVENTIVE MEDICINE EXPENSE—1933

May	
L. O. Geib.....	\$ 20.00

CIVIC AND INDUSTRIAL RELATIONS COMMITTEE EXPENSES—1933

February	
Harrison S. Collisi.....	\$ 8.88
June	
Harrison S. Collisi.....	10.48
September	
Harrison S. Collisi.....	1.10
	\$ 20.46

LEGISLATIVE COMMITTEE—EXPENSES 1933

March	
Earl I. Carr.....	\$ 80.96
June	
Earl I. Carr.....	\$ 67.30
Carl F. Moll.....	33.15
	100.45
July	
J. M. Robb.....	\$ 47.60
E. I. Carr.....	157.66
Western Union Tel. Co.....	50.33
	255.59
September	
W. C. McCutcheon.....	32.50
October	
Wayne County Medical Society.....	\$673.80
Wayne County Medical Society.....	815.95
Wayne County Medical Society.....	192.50
	1,682.25
November	
Wm. A. Hyland.....	\$ 93.60
Wayne County Medical Society.....	80.96
Wayne County Medical Society.....	112.74
	287.30

December	
E. I. Carr.....	\$ 13.69
James B. Bradley.....	21.48
L. G. Christian.....	46.58
Philip Riley.....	18.00
	99.75
	\$2,538.80

COUNCIL EXPENSE—1933

Note: Executive Committee Expenses are included in Chairman's and Secretary's accounts.

January	
F. C. Warnshuis (Hotel Statler).....	\$ 45.00
March	
Richard Burke.....	\$ 50.00
C. E. Boys.....	18.24
H. R. Carstens.....	9.69
Henry Cook.....	10.00
Wm. A. Hyland.....	16.63
G. L. Le Fevre.....	41.95
J. Earl McIntyre.....	72.23
Julius H. Powers.....	25.00
F. C. Warnshuis.....	71.55
B. H. Van Leuven.....	43.90
Burton R. Corbus.....	73.50
F. C. Warnshuis.....	15.38
C. E. Boys.....	6.00
Henry Carstens.....	13.75
	467.82
April	
F. C. Warnshuis.....	20.10
May	
C. A. Neafe.....	3.00
June	
F. C. Warnshuis.....	11.50
July	
F. C. Warnshuis.....	13.41
August	
Henry Cook.....	\$ 52.28
F. A. Baker.....	8.64
Theo. Heavenrich.....	11.86
F. C. Warnshuis.....	4.00
	76.78
September	
B. R. Corbus.....	\$ 89.90
Harlen MacMullen.....	31.60
	121.50
October	
University of Michigan Union.....	11.59
November	
H. A. Luce.....	16.64
December	
P. R. Urmston.....	\$107.14
H. A. Luce.....	19.19
	126.33
	\$ 913.67

JOURNAL EXPENSE—1933

January	
Bruce Publishing Co.....	\$ 601.97
February	
Bruce Publishing Co.....	648.96
March	
Bruce Publishing Co.....	479.93
April	
Bruce Publishing Co.....	721.02
May	
Bruce Publishing Co.....	392.23
June	
Bruce Publishing Co.....	362.49
July	
Bruce Publishing Co.....	353.02
August	
Bruce Publishing Co.....	493.96
September	
Bruce Publishing Co.....	\$469.14
Long distance call to Bruce.....	2.84
	471.98
October	
Bruce Publishing Co.....	420.33
November	
Bruce Publishing Co.....	620.78
December	
Bruce Publishing Co.....	505.90
	\$6,072.57

ANNUAL MEETING EXPENSE—1933

March	
G. H. Belote.....	\$ 4.80
G. J. Curry.....	7.20
Ralph B. Fast.....	16.80
A. R. Woodburne.....	11.50
Merrill Wells.....	12.63
	\$ 52.93

July		
F. J. Mester, Jr.	\$ 3.00	
Thomas Blue Print	6.00	
F. C. Warnshuis	16.80	25.80
August		
Bruce Publishing Co.	\$ 12.54	
Roger L. Warnshuis—Blue Prints	25.00	37.54
September		
Roger L. Warnshuis—Signs	\$ 20.00	
F. C. Warnshuis	18.00	
Pantlind Hotel	71.49	
D. P. Proos	13.00	
Ellsworth Letter & Cal. Service	16.75	
St. Louis Button Co.	55.52	
Bruce Publishing Co.	80.99	
T. Wingate Todd	40.66	
Civic Auditorium	225.00	
Donald Graverson	10.00	551.41
October		
F. A. Baker	\$25.18	
E. D. Plass	50.00	
Welker Letter Co.	11.50	
The Camera Shop	10.00	
H. R. Sign Co.	8.00	104.68
November		
Master Report Co.	\$211.18	
Evelyn M. Collar	5.00	
Thomas E. Jones	33.88	250.06
Credit for Exhibit Booths Sold		\$1,022.42
		560.00
		\$ 462.42

MEDICO-LEGAL DEFENSE

RECEIPTS AND DISBURSEMENTS—1933

Receipts		
Balance from 1932		\$1,739.74
January		
Dues		569.00
February		
Dues		367.00
March		
Dues	\$470.50	
Interest on Bonds	30.00	500.50
April		
Dues		932.00
May		
Dues		1,206.00
June		
Dues	\$156.00	
Interest on Bonds	247.50	403.50
July		
Dues	\$744.58	
Interest on Bonds	27.50	772.08
August		
Dues		225.94
September		
Dues		110.80
October		
Dues		992.42
November		
Dues		264.71
December		
Dues	\$104.77	
Interest on Bonds	250.00	354.77
		\$8,438.46

Disbursements

March		
Wm. J. Stapleton, Jr., Jan. Salary	\$83.33	
Do., Feb. Salary	83.33	
Do., Feb. Exp.	7.50	
Do., Mar. Salary	83.33	\$ 257.49
April		
Wm. J. Stapleton, Jr., Salary		83.33
May		
Wm. J. Stapleton, Jr., Salary	\$ 83.33	
Do., Expenses	2.68	
Herbert V. Barbour	750.00	836.01
June		
Wm. J. Stapleton, Jr., Salary	\$ 83.33	
Douglas-Barbour	313.55	396.88
July		
Wm. J. Stapleton, Jr., Salary	\$ 83.33	
Douglas-Barbour	250.00	333.33

August		
Wm. J. Stapleton, Jr., Salary		83.33
September		
Wm. J. Stapleton, Jr., Salary	\$ 83.33	
Do., Expenses	2.00	
Douglas-Barbour	348.98	434.31
October		
Wm. J. Stapleton, Jr., Salary	\$ 83.33	
Douglas-Barbour	175.00	258.33
November		
Wm. J. Stapleton, Jr., Salary	\$ 83.33	
Do., Expenses	2.00	
Douglas-Barbour	103.72	189.05
December		
Wm. J. Stapleton, Jr., Salary	\$ 83.37	
Douglas-Barbour	140.00	223.37
Receipts		\$3,095.43
Disbursements		3,095.43
Balance		\$5,343.03

HEALTH AGENCIES SURVEY

RECEIPTS AND DISBURSEMENTS—1933

Receipts

Sale of Health Survey Reports

May		
10 Books @ \$2.50		\$ 25.00
June		
34 Books @ \$2.50		85.00
July		
10 Books @ \$2.50		25.00
August		
10 Books @ \$2.50		25.00
September		
4 Books @ \$2.50		10.00
October		
5 Books @ \$2.50		12.50
November		
23 Books @ \$2.50		57.50
December		
2 Books @ \$2.50		5.00
		\$ 245.00

Disbursements

March		
Nathan Sinai—Salary	\$ 250.00	
Nathan Sinai—Expense	459.10	
Ward Schopps Company	15.00	
F. C. Warnshuis	14.60	\$ 738.70
April		
Nathan Sinai—Expense	\$ 622.43	
F. C. Warnshuis	50.00	672.43
May		
C. S. Gorsline	\$ 19.60	
Nathan Sinai—Expense	140.88	
Nathan Sinai—Expense	207.61	
W. H. Marshall	120.00	
F. C. Warnshuis, Detroit-Statler	98.40	
F. C. Warnshuis, "	50.00	636.49
June		
L. G. Christian	\$ 44.73	
F. C. Warnshuis	14.45	
F. C. Warnshuis	11.26	
C. S. Gorsline	6.30	
F. C. Warnshuis	125.00	
Nathan Sinai—Expense	50.00	251.74
July		
Edwards Bros.	\$1,169.64	
F. C. Warnshuis	6.36	
F. C. Warnshuis	9.06	
Nathan Sinai—Salary	1,500.00	
Nathan Sinai—Expense	431.42	3,116.48
August		
Detroit Clipping Bureau		11.60
September		
Nathan Sinai—Expense		195.64
Receipts		\$5,623.08
Balance		245.00
		\$5,378.08

Grand Rapids, January 10, 1934.

Michigan State Medical Society,
Grand Rapids, Michigan.

Gentlemen:

We have made an examination of the general accounts of the MICHIGAN STATE MEDICAL SOCIETY for the year ended December 23, 1933.

In addition to an examination of the accounts pertaining to the assets and liabilities of the Society at December 23, 1933, we have reviewed the operating accounts and have made tests of the recorded cash transactions for the year then ended. The scope of our work and the extent of the detailed records examined are outlined in later sections of this report.

The Society was incorporated as an association not for pecuniary profit under the laws of the State of Michigan on September 17, 1910. The purpose of the Society is the federation and protection of the medical profession and the extension of medical knowledge. The Society publishes THE JOURNAL OF THE MICHIGAN STATE MEDICAL SOCIETY.

FINANCIAL ANALYSIS

A balance sheet is included herein which, in our opinion, shows the financial condition of the Society as of December 23, 1933, on the basis outlined in this report. The following statement affords a comparison of the assets and liabilities at the beginning and end of the year.

Assets			
	Dec. 23, 1933	Dec. 24, 1932	Increase Decrease
Cash	\$ 1,044.43	\$ 459.05	\$ 585.38
Notes and accounts receivable	1,482.73	1,565.56	82.83
Securities—at cost, less allowance	18,310.00	20,935.00	2,625.00
Contract for medical history .....	.....	3,000.00	3,000.00
Deferred expenses	54.62	.....	54.62
	<u>\$20,891.78</u>	<u>\$25,959.61</u>	<u>\$ 5,067.83</u>
Liabilities			
Notes payable	\$ 2,500.00	\$ 3,800.00	\$ 1,300.00
Accounts payable	889.87	1,984.31	1,094.44
Unearned income	928.75	.....	928.75
Reserves:			
For Medico Legal Defense Fund	\$11,808.03	\$ 8,107.24	\$ 3,700.79
For medical history .....	.....	3,000.00	3,000.00
	<u>\$11,808.03</u>	<u>\$11,107.24</u>	<u>\$ 700.79</u>
Net worth	<u>4,765.13</u>	<u>9,068.06</u>	<u>4,302.93</u>
	<u>\$20,891.78</u>	<u>\$25,959.61</u>	<u>\$ 5,067.83</u>

The cash on deposit is available on an unrestricted basis. Notes receivable were accepted in payment of dues for the years 1931, 1932 and 1933, and were due as follows:

Due Date	Amount
December 1, 1932	\$320.00
December 1, 1933	197.50
January 1, 1934	8.75
February 1, 1934	8.75
Total	<u>\$535.00</u>

The notes bear interest at 5 per cent, but no charge for interest has been made on notes paid by members during the current year.

Advertisers' accounts receivable were analyzed by us as to date of charge and are classified in comparison with the balances at December 24, 1932.

The amount shown as due from county societies represents dues collected for the Society and subsequently impounded in depository banks. These accounts are payable pro rata as the funds of the county societies are released by the banks.

Accounts receivable for medical history arose through the sale of the medical history. These accounts are principally due from members in good standing and the Secretary advised us that they would ultimately be paid.

Based upon our analysis of the notes and accounts

and conference with the Secretary as to their collectibility, it is our opinion that the allowance for doubtful accounts in the amount of \$700.00 is sufficient to care for losses anticipated thereon at December 23, 1933.

We have included hereinafter a schedule of the bonds owned by the Society which shows the par value, cost and approximate market value as of December 23, 1933. Market values are based on closing market quotations at December 23, 1933, where available. Unlisted bonds were valued on the basis of information received from brokers as to the latest bid or sales prices. An allowance in the amount of \$23,208.75 has been provided to reduce the book value to approximate market value at December 23, 1933. Bonds having a total par value of \$5,000.00 have been pledged as collateral security for a note payable of \$2,500.00. During the year, bonds of the Palmer Building Corporation having a par and cost value of \$2,000.00 were sold for \$150.00, resulting in a loss of \$1,850.00. These bonds were a part of the general fund of the Society and were stated at a net value of \$500.00 in the annual report for 1932.

The item classified as a deferred charge represents expenses for stationery and printing which are properly chargeable against future operations of the Society.

At December 23, 1933, approximately 124 sets of the Medical History were in the hands of the publishers, but owing to the small number of sales, no consideration has been given to the inventory value thereof.

As far as we could ascertain, provision has been made for all known liabilities of the Society. Invoices for services rendered and expenses incurred by the Committee on Economics have not been acknowledged as liabilities of the Society and therefore have not been included in the preparation of this report.

The recorded transactions entering into the fund administered by the Society for the Joint Committee on Public Health Education are shown in an exhibit included as a part of this report. There was no change during the year in the balance due the Couzens' Foundation.

Payments received to apply on dues for the year 1934 have been shown as unearned income and, in our opinion, represent income applicable to the following year.

The reserve for the Medico-Legal Defense Fund represents the amount set aside to be used for the protection of the medical profession. An amount of \$2.00 from each member's dues for the year has been allocated to this fund. A summary is included hereinafter showing the changes in the fund for the year ended December 23, 1933.

The net worth of the Society decreased \$4,302.93 during the year of which amount a total of \$2,572.50 was due to the additional provision necessary to reduce bonds to indicated market value and to the loss on the sale of \$2,000.00 par value of Palmer Building Corporation bonds.

Surety bonds issued on Dr. William A. Hyland and Dr. Frederick C. Warnshuis, in the amounts of \$25,000.00 and \$10,000.00, respectively, were examined by us.

OPERATIONS

We present elsewhere in this report a statement of income and expense showing the results from activities for the year ended December 23, 1933. The scope of our work in connection with the preparation of this statement consisted of test checks of the cash and operating transactions as hereinafter outlined. A comparison of the income and expense for the years ended December 23, 1933, and December 24, 1932, is shown by the following summary:

Income

	Year Ended		Increase Decrease
	Dec. 23, 1933	Dec. 24, 1932	
Membership dues.....	\$16,021.50	\$21,282.99	\$ 5,261.49
Journal revenue.....	11,697.88	16,815.03	5,117.15
Interest received.....	1,210.01	1,486.38	276.37
Sales of medical history.....	10.00	20.00	10.00
	<u>\$28,939.39</u>	<u>\$39,604.40</u>	<u>\$10,665.01</u>
Less dues refunded.....		8,132.87	8,132.87
Total Income.....	<u>\$28,939.39</u>	<u>\$31,471.53</u>	<u>\$ 2,532.14</u>
Expenses			
Administrative and general....	\$ 8,345.94	\$ 8,700.47	\$ 354.53
Society activities.....	3,365.38	3,764.52	399.14
Committee expenses.....	8,261.70	5,479.66	2,782.04
Journal expenses.....	10,217.55	12,642.66	2,425.11
Other deductions.....	829.25		829.25
Total Expenses.....	<u>\$31,019.82</u>	<u>\$30,587.31</u>	<u>432.51</u>
Net Income or Deficit....	<u>\$ 2,080.43</u>	<u>884.22</u>	<u>\$ 2,964.65</u>

SCOPE OF EXAMINATION

The scope and nature of our examination are outlined in the following comments:

Cash on deposit was verified by direct correspondence with the depository bank and reconciliation of the balance reported by the bank with the amount shown herein. Cash on hand was counted during the course of our examination. The cash

receipts recorded for the year were compared with the bank deposits as shown by the bank statements on file. The recorded cash disbursements for three months of the year selected by us, were found, with minor exceptions, to be supported by canceled checks, invoices or other memoranda.

Notes receivable were inspected by us. Advertisers' and other accounts receivable were found to be in agreement with trial balances of the individual accounts. We did not correspond with any of the debtors to confirm the correctness of the book records.

Bonds owned by the Society, except for \$5,000.00 par value pledged as collateral security, were inspected by us. Bonds pledged as collateral security were verified by correspondence with the Bank.

In addition to a test of the cash transactions, as heretofore outlined, we tested the amount of dues collected by comparison with the Secretary's records of paid memberships. Interest received was verified by accounting for the coupons clipped since our examination as of December 24, 1932, and all unpaid coupons of defaulted bonds were examined by us. Major expense charges were investigated and all items so examined were found to be in order.

Very truly yours,

ERNST & ERNST,

Certified Public Accountants.

[Seal]

BALANCE SHEET

MICHIGAN STATE MEDICAL SOCIETY

DECEMBER 23, 1933

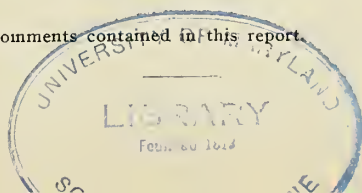
Assets

	Year Ended		Increase Decrease
	Dec. 23, 1933	Dec. 24, 1932	
Cash			
On deposit—commercial account.....		\$ 230.68	
Certificate of deposit.....		533.75	
For deposit.....		280.00	
		<u>700.00</u>	\$ 1,044.43
Notes and Accounts Receivable			
Notes receivable for dues.....	\$ 535.00		
Advertisers' accounts.....	1,103.22		
Dues from county societies.....	347.51		
Advance to member.....	100.00		
Accounts receivable for medical history.....	97.00		
		<u>2,182.73</u>	
Less allowance for possible losses.....		700.00	1,482.73
Securities			
Bonds—at Cost (\$5,000.00 par value pledged).....		\$41,518.75	
Less allowance to reduce to approximate market value.....		23,208.75	
		<u>18,310.00</u>	
Deferred			
Supplies for year 1934.....			54.62
			<u>\$20,891.78</u>

Liabilities

Note Payable			
To Old Kent Bank—secured by bonds having a par value of \$5,000.00.....			\$ 2,500.00
Accounts Payable			
To vendors for 1933 expenses.....	\$ 194.62		
Joint Committee on Public Health Education.....	549.88		
Advances for reprints.....	106.00		
Couzens' Foundation.....	39.37		
		<u>889.87</u>	
Unearned Income			
Dues for year 1934.....			928.75
Reserve			
For Medico-Legal Defense Fund.....			11,808.03
Net Worth			
Balance at December 26, 1932.....	\$ 9,068.06		
Less: Net loss for the year ended December 23, 1933.....	2,080.43		
Additional provision to reduce bonds to approximate market value.....	2,222.50		
		<u>4,302.93</u>	
			4,765.13
			<u>\$20,891.78</u>

This balance sheet is subject to the comments contained in this report.



INCOME AND EXPENSE
MICHIGAN STATE MEDICAL SOCIETY

Income			
	Year Ended		Increase Decrease
	Dec. 23, 1933	Dec. 24, 1932	
Membership fees.....	\$16,021.50	\$21,282.99	\$ 5,261.49
Journal subscriptions.....	4,789.67	8,333.17	3,543.50
Advertising sales.....	5,543.66	6,234.94	691.28
Reprint sales.....	1,249.28	1,780.97	531.69
Interest received.....	1,210.01	1,486.38	276.37
Journal cuts.....	115.27	465.95	350.68
Sale of medical history.....	10.00	20.00	10.00
	\$28,939.39	\$39,604.40	\$10,665.01
Less dues refunded.....		8,132.87	8,132.87
TOTAL INCOME	\$28,939.39	\$31,471.53	\$ 2,532.14
Expenses			
Administrative and General			
Secretary's salary.....	\$ 4,000.00	\$ 4,204.00	\$ 204.00
Stenographers' salaries.....	1,739.00	2,165.00	426.00
Office rent.....	1,400.00	1,250.00	150.00
Postage.....	432.34	197.92	234.42
Sundry general expense.....	774.60	883.55	108.95
	\$ 8,345.94	\$ 8,700.47	\$ 354.53
Society Activities			
Annual meeting.....	\$ 462.42	\$ 1,369.06	\$ 906.64
Council expenses.....	913.67	996.87	83.20
Delegates to American Medical Association.....	217.09	887.44	670.35
Sundry society expense.....	1,772.20	511.15	1,261.05
	\$ 3,365.38	\$ 3,764.52	\$ 399.14
Committee Expense			
Survey of medical service and health agencies.....	\$ 5,378.08	\$ 4,484.88	\$ 893.20
Legislative committee.....	2,538.80	122.17	2,416.63
Post graduate conferences.....	278.75	410.29	131.54
Economics committee.....	25.61		25.61
Civic and industrial relations.....	20.46	9.00	11.46
Preventive medicine.....	20.00		20.00
Radio committee.....		146.45	146.45
Cancer committee.....		56.87	56.87
Donation to Joint Committee on Public Health Education.....		250.00	250.00
	\$ 8,261.70	\$ 5,479.66	\$ 2,782.04
Journal Expenses			
Editor's salary.....	\$ 2,500.00	\$ 2,500.00	
Editor's expenses.....	649.28	996.15	346.87
Printing expense.....	6,072.57	7,690.38	1,617.81
Cost of reprints.....	995.70	1,456.13	460.43
	\$10,217.55	\$12,642.66	\$ 2,425.11
Other Deductions			
Loss of \$1,850.00 on bonds sold, less allowance of \$1,500.00 previously provided for shrinkage in market value thereof.....	\$ 350.00		\$ 350.00
Bad accounts charged off and provided for.....	479.25		479.25
	\$ 829.25		\$ 829.25
TOTAL EXPENSES	\$31,019.82	\$30,587.31	\$ 432.51
NET INCOME OR DEFICIT	\$ 2,080.43	\$ 884.22	\$ 2,964.65

SUMMARY OF INCOME AND EXPENSE—JOINT COMMITTEE
ON PUBLIC HEALTH EDUCATION
MICHIGAN STATE MEDICAL SOCIETY
YEAR ENDED DECEMBER 23, 1933

Balance Due Joint Committee—December 26, 1932.....		\$ 1,813.44
Income		
The Detroit News—for articles published.....		999.96
		\$ 2,813.40
Expenses		
Salaries:		
Mabel Kelly.....	\$ 1,200.00	
Herman Rucker.....	900.00	\$ 2,100.00
Mayer-Schairer Company.....		25.64
Don E. Lyons.....		86.00
J. D. Bruce.....		51.88
		2,263.52
BALANCE DUE JOINT COMMITTEE, December 23, 1933		\$ 549.88

SUMMARY OF CHANGES IN MEDICO-LEGAL DEFENSE FUND RESERVE
MICHIGAN STATE MEDICAL SOCIETY
YEAR ENDED DECEMBER 23, 1933

Balance in Medico-Legal Defense Fund—December 26, 1932.....		\$ 8,107.24
Income		
Dues from members.....	\$ 6,143.72	
Interest on bonds.....	555.00	6,698.72
		\$14,805.96
Expenses		
Douglas, Barbour, Dusenberg & Purdy for legal services.....	\$ 2,081.25	
William Stapleton, Jr.—salary.....	1,000.00	
Postage and miscellaneous.....	14.18	3,095.43
		\$11,710.53
Decrease in allowance for reduction of bonds to market value.....		97.50
BALANCE IN MEDICOL-LEGAL DEFENSE FUND at December 23, 1933		\$11,808.03

The above report, insofar as related to County Society problems, was referred to the Committee on County Societies. Those related to Finances were referred to the Committee on Finance and those related to Publication were referred to the Committee on Publication.

5. Prof. W. E. Henderson, Director of the Extension Division of the University of Michigan, presented the following report for the Joint Committee on Public Health Education:

REPORT OF THE JOINT COMMITTEE ON
HEALTH EDUCATION

It was deemed advisable, this year, not to call a full meeting of the Joint Committee together at the time of the Council meeting in Detroit but to submit a report of the health education work done during the current year up to date.

On account of the financial condition at the beginning of the year it was necessary to discontinue the services of Dr. Soller as field organizer in connection with health education lectures. This was a set-back so far as the activities of the Joint Committee health program in connection with high school assemblies was concerned. It was necessary, therefore, to make assignments as far as possible in the various centers of the State through the medium of correspondence, as relating both to program committees and to the physicians and dentists interested in the work. During October, November, and December, health lectures were assigned in the following centers: Adrian, Almont, Niles, Northville, Plymouth, Grand Rapids, Jackson, Lansing, Montgomery, Saline, Detroit, Escanaba, Eaton Rapids, Hesperia, Fremont, and Three Rivers.

Other assignments, of course, will be made during the remainder of the year. I find that it is not difficult to arrange with clubs and high school assemblies for health lectures. The great difficulty experienced at the present time is in getting doctors to undertake the work, especially when any considerable driving is to be done. The main objection, no doubt, is the expense involved, since no provision is made for taking care of traveling expenses in connection with these lectures.

The matter of expenses, however, is not the whole story. I find that a personal contact from time to time with the doctors is necessary to keep an interest in the work. This contact with County Medical Society groups and local physicians and dentists is even more important in work of this sort than the contact with the high school principals and other educators.

The correctness of this observation is strikingly verified by a new experiment which we have undertaken in connection with the health work, namely, the organization of rural communities. Heretofore we have devoted our attention mainly to health lectures in connection with city, town, and village schools, and have made very little attempt to organize the rural schools of the various counties. I have felt, for quite some time, that the county organization would be worth trying and this year the opportunity presented itself. Last year Mrs. T. S. Webber of Ypsilanti, who, I believe, was connected with the health committee of the Washtenaw County Federation of Women's Clubs, conceived the idea of having health lectures given in certain district schools of the county, especially in places where she was personally acquainted. A good start was made last year. As a result of this work the Washtenaw County Medical Society appointed a committee, consisting of Doctors Gladys Kleinschmidt, and Forsythe of Ann Arbor, and Dr. Snow of Ypsilanti. This committee applied to the Extension Division for information and such assistance as might be available in connection with the organization of the work, their main objective being to find some source of revenue for the payment of traveling expenses, telephone calls, and so forth, incident to the organization of the county schools. After a conference with the committee it was suggested that a larger committee be appointed including, in addition to the three doctors selected to represent the County Medical Society, the County Superintendent of Schools, County Nurse, Mrs. Webber representing the County Federation of Women's Clubs, and Dr. C. A. Fisher of the University Extension Division. The Extension Division agreed to finance the project up to a certain amount.

The work of organization was done through the medium of personal visits to the various country schools by the County Superintendent of Schools, Dr. Gladys Kleinschmidt, and Mrs. Weber. Most of these visits were made by Mrs. Weber, who is thoroughly acquainted with the county as a result of her previous experience. There are 130 one-room rural schools in operation in Washtenaw County. Up to date health programs have been arranged in 93 schools. The plan, as carried out by the committee, is about as follows:

The first step is to have some person, such as the County Superintendent, or other representative of the committee, get in touch with the district through the medium of the local teacher and the district school board. If all concerned are agreeable to the idea, of having one or more health lectures given, the school then makes a formal request for such a program. This request is sent to the chairman of the County Medical Society committee who arranges for the speakers. In some cases the doctors use their own cars while in other cases

members of the Kiwanis Clubs of Ann Arbor and Ypsilanti have provided transportation.

The doctors chosen for these programs, as arranged thus far, are as follows: Doctors Forsythe, Ross, Wisdom, Fopeana, Emerson, Gladys Kleinschmidt, Earl E. Kleinschmidt, Jacox, Jiminez, Brace, Wessinger, Sheldon, Solis, Law, Freyberg, Watson, Rugen, and Sacks of Ann Arbor; Dr. DeTar of Milan, James Foreman, D.D.S., of Clinton; Dr. Worth of Ypsilanti; Dr. Durfee of Dexter; Dr. Gates, Mr. Nebulung, Mr. Baroskey, Mr. Block, Miss Sprague, and Miss Spoeneman of the University staff and Mrs. Flora Brown of the Tuberculosis Association. This makes a total of 31.

Sixty-five lectures in the series have thus far been given and arrangements for forty more are in progress. Most of these lectures were given in rural schools, although some were given in connection with grange meetings and other local groups. Reports of the lectures up to date show an average attendance of fifty. When we consider that in most of our rural schools the attendance is usually not more than twenty at the outside, the average attendance of fifty means that a relatively large percentage of parents were present.

The time required for the organization of the work in these ninety-three schools was about fifteen days, with a total car mileage of 1,270 miles.

Lectures outlines on subjects previously approved by the Joint Committee were furnished to the doctors. In addition to this there were added to our list of illustrative material for these lectures some 30 slides which were prepared and paid for by the Extension Division. The Extension Division also paid the mileage charges and telephone and postage bills.

The Washtenaw County health project may be taken as an indication of what might be done in other counties of the State, provided the local Medical Society and the County Superintendent of Schools agreed upon a coöperative working plan. In addition to this, of course, it would be necessary probably to have some local person interested in health work assist the County Superintendent of Schools and the chairman of the health education committee of the county medical society to get in touch with the rural communities. If such a plan should be carried out next year in other counties, I cannot too strongly urge the necessity of securing the coöperation of the County Superintendent of Schools.

Experience during the past five or six years has demonstrated the fact that if a well organized and continuous health program is to be carried on through the assistance of physicians and dentists of the State, some person should be employed to act as contact man for both the schools and the professional men concerned. This person should preferably hold an M.D. degree. This gives him a standing, both with the schools and with the doctors. In addition, he should have certain qualifications as a speaker. Until such a field man can be secured for our health education work, as outlined by the Joint Committee, it will be necessary for us to carry the work on as best we can through the office of the Extension Division or such agencies as may be available.

W. D. HENDERSON, *Secretary*.

The above report was discussed by Dr. J. D. Bruce of Ann Arbor. The Chairman referred the report to the Committee on County Societies.

6. The Editor, J. H. Dempster, submit-

ted the following as his report for the year as Editor:

EDITOR'S REPORT

To the President, Chairman of the Publication Committee and Members of the Council:

It has been one of my pleasant duties each year since my appointment as editor of THE JOURNAL OF THE MICHIGAN STATE MEDICAL SOCIETY to give a report of the year that has just closed, which report refers, I hope, in a modest way to what the editor has done as well as what he has attempted to do. My constant effort has been to keep THE JOURNAL up to a certain standard. The aim has been high. Probably not so much can be said of the performance. As I have said in previous reports, the twelve issues of the year are before you to judge for yourselves. It is almost needless to say that the diminution of finances as compared with the fat years has necessitated a smaller journal. This has been accomplished largely through a matter of selection. Your editor is firmly of the belief that the shorter article stands a greater chance of being read by a larger number of doctors than those of greater length. He has accordingly, where quality permitted it, given preference to the briefer article. While THE JOURNAL for 1933 is 150 pages smaller than that of 1932, it contains only eighteen papers, or an average of one and a half a month less than the 1932 JOURNAL. The number of editorials in 1932, Volume 31, was seventy-three, while the number for Volume 32 (1933) was sixty-four. The call for space in THE JOURNAL goes on unabated and the papers vary in length from those which can be read in a few minutes to several the size of an ordinary monograph.

Editorially we have confined ourselves to such subjects as any editor might be expected to discuss with a fair degree of intelligence. They have been subjects for the most part economic and sociologic in character. The more scientifically technical subject is for the specialist. One feature of Volume 32 (1933) which is worthy of comment is the publication of the lectures which are given each year by the Beaumont Foundation under the auspices of the Wayne County Medical Society. The 1933 lectures, three in number, by the noted physiologist of Harvard University Medical School, Dr. W. B. Cannon, marked the 100th Anniversary of the publication of William Beaumont's epoch-making book which contained his discoveries in the physiology of digestion. These lectures have since been reprinted in a limited edition.

Regarding the quality of contributed articles we might say that it shows an improvement each year and since the largest room in the world is the room for improvement, it is hoped that writers for the medical press may treat the matter very seriously even to the extent of re-writing their papers several times, if need be, under competent criticism.

The Publication Committee have been of material assistance and my sincere thanks is accorded them; while I have endeavored to refrain from bothering them with the details of the editorial function, I have not been backward in consulting them on matters involving editorial policy. I have had the fullest and most satisfactory coöperation from the Secretary in his capacity as business manager of THE JOURNAL.

The coöperation of the publisher, likewise, has been beyond reproach. The typographical quality of a journal is, of course, the work of the publisher, who can make or mar the efforts of contributor and editor when each has done his best.

J. H. DEMPSTER.

This was referred to the Publication Committee.

7. J. B. Bradley, Chairman of the Legislative Committee, addressed the Council on the program of the policies of his Committee. These were discussed in detail, but no specific action was taken by the Council other than to commend Dr. Bradley and his committee for their aggressive activity.

8. The Secretary presented several communications from the Crippled Children's Commission, from the Marquette-Alger County Society and from certain other county organizations. These were discussed by Drs. Manthei, Baker, Perry and Bruce. No action was taken at this time, inasmuch as the Secretary reported that Dr. Fensch, a member of the State Commission, would appear before the Council at a later hour.

9. The Chairman and the Secretary outlined the activities that had been pursued by the officers and the Executive Committee in all matters related to the State application of the regulations of Federal Emergency Relief Commission and the C. W. A. These were referred to the Committee on County Societies.

10. The Treasurer, William A. Hyland, presented the following as his annual report:

TREASURER'S REPORT—1933

Members of the Council:

I have the honor to present to the members of the Michigan State Medical Society my report as Treasurer for the year 1933.

As required by the by-laws of the Society, the usual indemnity bond was filed with the State Secretary.

The following bonds are now in my holding:

Peoples Light and Power Corp.....	5½%	2,000
New England Gas & Electric Co.....	5%	2,000
Am. Telephone and Telegraph Co.....	5%	2,000
Community Power and Light Co.....	5%	2,000
Pennsylvania Railroad Co.....	5%	2,000
National Electric Power Co.....	5%	5,000
Herald Square Building.....	6%	2,000
United Light and Power Corp.....	5½%	2,000
Lower Broadway Properties, Inc.....	6%	2,000
Associated Gas and Electric Corp.....	5%	2,000
New York Central Railroad Co.....	4%	2,000
G. R. Affiliated Corp.....	5%	7,000
Palmer Building Corp.....	6%	2,000

Regarding the foregoing, I wish to make the following statement:

Palmer Building Corporation—\$2,000—check for \$150, principal, dated October 25, 1933, delivered to the State Secretary. Bonds in default.

Lower Broadway Properties, Inc. Bonds in default.

I hold Certificate of Deposit of the National Gas and Electric Corporation—\$2,400, signed by the Northern Trust Co.

Also hold receipt for Certificate of Deposit covering \$3,000 Michigan Fuel and Light Co., 6 per cent Series "A" Bonds, to be exchanged for new securities.

The following bonds were authorized to be used as collateral by the Secretary for various loans and were deposited and returned when the notes were paid in full as follows:

November 22, 1932—Loan from bank.....	\$1,500.00
December 31, 1932 " " "	2,300.00
	\$3,800.00

Collateral:	
New York Central Railroad Co.....	2,000.00
Pennsylvania Railroad Co.....	1,000.00
G. R. Affiliated Corporation.....	5,000.00
June 16, 1933—Paid in full and collateral returned.	

July 12, 1933—Loan from bank.....	\$2,500.00
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Collateral:	
American Telephone and Telegraph Co.....	2,000.00
Pennsylvania Railroad Co.....	1,000.00
International Telephone and Teleg. Co.....	2,000.00

Loan has not been paid to date.

I attach hereto your Auditor's rating.

Respectfully,

WILLIAM A. HYLAND, *Treasurer.*

This was referred to the Finance Committee.

11. Dr. William J. Stapleton, Jr., Chairman of the Medico-Legal Committee, submitted the following as his annual report:

REPORT OF MEDICO-LEGAL COMMITTEE MEDICO-LEGAL REPORT

Following is the report of the Medico-Legal Committee for the year 1933. The chairman desires to thank the members of the committee for their part in carrying on the work. A special word of thanks is due Dr. Angus McLean for his valuable help and counsel and his appearance in court. Thanks are also due our attorney, Mr. Herbert Barbour, and Mr. Purdy, of his office, who have been of much help in the year's work. The intercourse between the committee and Mr. Barbour's office has been most cordial and helpful. We also extend our thanks to Dr. F. C. Warnshuis, Secretary, for his help.

As in previous reports, we again call attention to the many malpractice cases. The cases listed do not include the many threats which have not as yet reached the courts. We feel that every physician should be on his guard constantly so as to avoid any reason, real or alleged, for a malpractice suit. It behooves every one of us, general practitioner and specialist, to be very careful how we act toward people who come to us. This is especially true where complaints are registered against the former physician. *An unwise statement may be the cause of a malpractice suit.* Again we stress the fact that x-rays should be taken in all fracture cases before and after reduction and before discharge. It also is wise to pay particular attention to any cases you take care of for the Welfare or in the various projects sponsored by the City, State or National Government.

The question of what constitutes a correct and sufficient examination has been fought out in the courts. This refers to the matter of blood counts, taking of temperatures and the method of examination. Also the question of when a physician should make a call. We feel that all physicians should acquaint themselves with their right and privileges as doctors. We suggest the reading of such a book as "Medical Jurisprudence," by Scheffel. The malpractice suit is now generally accepted as a type of a "racket." No physician can afford to practice without protection of some kind. Verdicts are being given against physicians in all sorts of cases by juries. Some of the verdicts have been very large.

We have caused to be published in our JOURNAL and have made talks regarding malpractice to various groups. With all our efforts the cases are increasing. Whether it is as Mr. Barbour states in his

report a desire to secure easy money or not it is up to each of us to guard not only oneself but his brother doctor in every way. We are surely "our brother's keeper" in these days. The old saying, "United We Stand, Divided We Fall," applies to the doctors not only in the menace of malpractice but to the whole fabric of medicine.

We ask your careful consideration of Mr. Barbour's report.

PARTIAL CLASSIFICATION

Treatment of eye case.
Treatment of jaw.
Steel in eye (2).
Burn by electrode—burn by heat lamp—11.
Hernia operation—\$250,000 asked—settled for \$50.00.
Scrotal hernia—Hernia operation—2.
Fracture—leg—6.
Fracture—improper setting—2.
Fracture—resulting in amputation.
Fracture—elbow joint.
Fracture—leg.
Fracture—shoulder.
Fracture—shoulder.
Fracture—improper setting.
Fracture—arm—3.
Heat machine—burn.
Loss of service by husband.
Chronic appendicitis—alleged malpractice.
Treatment of infection of nose.
Mental case—improper restraint.
Demands for refund of money.
Breaking off of needle in doing spinal puncture.
Breaking off of needle in right breast.
Failure to properly diagnose spinal meningitis.
Removal of wrong bone in wrist operation.
Sinus operation.
Assault and battery.
Confinement case—lack of care—1.
Confinement cases—burned by solution used by doctor—2.
Removal of tonsils resulting in loss of sight.
Removal of tonsils—deaf while taking anesthetic.
Improper methods to have plaintiff declared incompetent.
Improper diagnosis and treatment—3.
Death following treatment.
Threats—8 cases.
Vokeman's paralysis following fracture.
Malpractice: involving amputation of finger; when doctor is dead; in operating; after operation; in operating; alleging doctor did not make proper check of glasses after prescription was filled; following operation when rubber tube was used for drainage and adhesive plaster was used instead of a safety pin; poliomyelitis—alleged wrong diagnosis; goiter operation; extraction of teeth—not enough attention; burn by iodine following abdominal and vaginal operation; automobile accident—wrong treatment; hemorrhoids—death following anesthetic; kidney operation—leaving of drainage sponge in wound (leaving sponge serious), the doctor is dead and suit is against the estate; cross bill alleging malpractice.

We started to keep a record of the telephone calls and office consultation regarding various phases of medico-legal matter, but gave it up. A few of the cases will give you an idea.

1. Does a doctor have to obey a subpoena?
2. Does a doctor have to act as an expert witness?
3. Does a doctor have to give information in a case?
4. What about our duties testifying against another in court?
5. What can be done about a man who calls himself a doctor?
6. Doctor asks information regarding a morphine addict threatening him.
7. What about fees for testifying for insurance companies?
8. Asked to obtain proper release forms for hospitals.
9. Asked by attorney to provide him with an expert.
10. Dr. McLean and I had conference with Mr. Barbour resulting in 30 per cent discount on all service for 1933.
11. Consultation with Medical Protection Company regarding situation in Allegan County.
12. Doctors and clinics: Can a doctor doing clinic work be sued?
13. Matter of doctor acting in adoption case.
14. Can a doctor charge for telephone call?
15. Doctor acting as witness in a will case.

The above are just a few—every case requires correspondence, talks with the attorney and with the doctors. There is much personal contact in these cases.

The committee would appreciate any constructive criticism.

INDEMNITY INSURANCE

The Medico-Legal Committee received a letter from the Secretary of the Society regarding a study and investigation of malpractice insurance. You have each received a copy of the same and for that reason the letter is not given here. In this letter was set forth the various phases of the question. The chairman of the Medico-Legal Committee was requested to take the matter up with his committee and with our attorney, Mr. Herbert Barbour, and supply such additional facts and recommendations as they thought pertinent to the Council.

This letter was accompanied by a proposed group plan of insurance from the Aetna Insurance Co. This you are also familiar with. We have placed in this report correspondence with the Aetna Company.

1. The Secretary has given an excellent résumé of the work of the committee.

2. Your chairman sent letters to Doctors Bruce, Carr and Manwarring of the committee. The question has been talked over numerous times with Dr. Angus McLean. The letters of Doctors Carr and Manwarring are presented as part of the report and should be read as expressing their sentiments regarding the plan.

Dr. Angus McLean is of the opinion that the present method is the correct one. Dr. Bruce has not replied. Mr. Herbert Barbour's letter is made part of this report. We have gone into the matter quite fully but not sufficiently to exhaust all sources of information.

1. The main objection to the present method is one of finance. As our Secretary so ably states, we do not see how any great reduction can be made by use of the group plan.

2. There is also this objection—some members feel they are paying for the upkeep of the Medical Defense beside carrying on other insurance. Even if they were given a credit of some sort, it would be only a small amount. In this connection, I would like to have definite information as to how many members actually carry additional insurance. Estimates vary from 25 to 50 per cent of the membership.

3. There is also the question of a monopoly—also a legal point (see case of DeHaan vs. Winter) Vol. 262—Michigan Reports, on page 192—a copy is enclosed.

4. I have had some correspondence with the New York Academy of Medicine and New York State Medical Society, where the Aetna have a group plan. The prices for insurance are much higher than the one offered us in Michigan. We have also received information from Ohio, Illinois and the A. M. A. Illinois State Medical Society use the same plan as our present one—cost \$1.20 per member a year. Ohio budgets a lump sum of \$5,000 a year. Their per capita is from 40 to 60 cents a year. A. M. A.—In the *Bulletin of the A. M. A.* for December, 1926, January and February, 1927, and December, 1928, are exhaustive reports of the Medical Defense Methods of the various state societies. We will have these copies at the meeting for your use, if desired.

5. There is no assurance that the amounts offered this year will be the same in years to come. This will depend, as I understand it, on the experience of the company.

6. In Doctor Manwarring's report there is a long list of the various group plans. I am sending this along for your information.

In my own opinion, I think the matter is one that requires considerable study. It means a change in

the Constitution of the Society. It cannot be put into force at once and for that reason the necessary machinery must be kept in working order. The new company would, of course, not take over the present litigation. Just how long a time would be necessary to get the plan in working order no one can tell. The above suggestions, together with the various enclosures make up a preliminary report for your consideration.

Respectfully submitted,
WILLIAM J. STAPLETON, JR., *Chairman.*

Mr. Herbert V. Barbour, the Society's attorney, addressed the Council upon the problems of the Committee and matters of insurance and discussed many of the cases that were now on the Committee's docket. There were many questions asked and a general discussion ensued, after which the report was referred to the Committee on County Societies.

12. Dr. Fensch, member of the State Committee on Crippled Children, addressed the Council upon his problems and the problems of the committee and requested guiding advice. The questions presented by Dr. Fensch were referred to the Committee on County Societies.

13. The Council adjourned at 5:50 P. M.

Following adjournment the Council was the guest of the Wayne County Medical Society for dinner at their Society Headquarters, and following the dinner the Council joined with the Wayne County Medical Society in its regular weekly meeting. The Wayne County meeting was addressed by President Le Fevre, President-Elect Smith, Chairman Corbus and the Secretary.

Second Session

The Council convened in second session in the Statler Hotel at 9:00 A. M., January 16, 1934.

With the Chairman presiding the following Councillors were present—Corbus, Cummings, Perry, Hafford, McIntyre, Powers, Van Leuven, Brunk, Heavenrich, Boys, Treynor, Urmston, Cook, Carstens and Manthei. There were also present President Le Fevre, President-Elect Smith, Editor Dempster, Treasurer Hyland and the Secretary.

14. The following report of the Publication Committee was presented:

REPORT OF PUBLICATION COMMITTEE

As your temporary chairman I wish to report the actions of the Publication Committee for the year 1933.

I wish to state first that the organization has lost a most valuable servant in Dr. Bruce, and I sense

the loss to the Publication Committee when I scan over the reports of this committee for the past few years. The Society and Council owe him a deep debt of gratitude for the service he has given.

One formal meeting of the committee was held in Detroit at which time Doctors Dempster and Brunk sought to instruct and acquaint me with the problems and policies of the JOURNAL. At this meeting I expressed the thought that inasmuch as medical men throughout the country and particularly in Michigan are intensely interested in economic questions, that we devote more space to articles of that nature. I still am of that opinion and would suggest that our profession be solicited for proper articles discussing economic problems.

The question of a change in publisher was discussed early in the year. We think it best to continue with the present publisher, who has been kind and generous and who has given us highly satisfactory service.

It has come to our attention that book publishers will no longer extend their advertising in State Journals. In this connection it is pointed out that if State Journal publishers would not give an extended review of medical books, these book publishers would possibly be forced to advertise again in our JOURNAL. This problem I think is one which merits discussion. I wish to compliment Doctor Dempster on the very fine JOURNAL he edits. Our JOURNAL stands high in America. Its fineness in every department stands as a compliment to him.

We wish to pay our respects to our secretary for his great ability in procuring for the JOURNAL the advertising necessary for its continued existence as a worth-while publication.

Respectfully submitted,

A. S. BRUNK,
FREDERICK A. BAKER.

Upon motion of Powers-Cummings, after a discussion of the report, it was directed that the Publication Committee should exercise great care in publishing contributed articles on economic problems in the JOURNAL.

Upon motion of Cummings-Powers the report of the Publication Committee was adopted.

15. The report of the Committee on County Societies, which was read by Doctor Treynor, section by section, at the request of the Chairman of the Committee, C. E. Boys, follows:

We would recommend adoption of changes as suggested for annual meeting, especially as relates to elimination of evening meeting.

As regards facilities for post graduate study, we feel that this feature should receive further emphasis to the membership as of vital importance to the practitioners of the state. We commend Doctor Bruce for his efforts in this connection and urge that he continue to expand these facilities as rapidly as possible.

We urgently recommend the renewal of Councilor district meetings as soon as finances permit.

We recommend the continuance of annual conference of County Secretaries and that actual expenses be paid as in the past.

We recommend the adoption of the report as a whole and commend the Secretary on the form and thoroughness of same.

REPORT OF MEDICO-LEGAL COMMITTEE

We recommend the adoption of the report of Doctor Stapleton's committee as a whole.

INDEMNITY INSURANCE

Your Committee feels that indemnity insurance should remain an individual or county concern and therefore have no recommendations to offer, feeling that it is outside the function of the State Society to foster any particular plan of insurance.

The Committee unanimously endorses the continuance of our present plan of medico-legal defense.

ECONOMICS COMMITTEE

We commend the adoption of the report as read.

JOINT COMMITTEE ON HEALTH EDUCATION

We recommend that some official acknowledgment of appreciation should emanate from the Council to Mr. McGregor for making the continuation of the Survey possible and to Dr. Bruce for his efforts in obtaining this aid.

REPORT OF LEGISLATIVE COMMITTEE

We endorse the remarks made by the Chairman relative to the plan of closer liaison with County Society Committees.

CRIPPLED CHILDREN'S COMMISSION

It is the belief of this Committee that the physicians of the Upper Peninsula desire the services of an orthopedic surgeon for the Upper Peninsula and that a substantial saving could be made to the state by establishing this service.

We recommend that this position shall be handled on a fee basis as is done elsewhere in Michigan rather than on a fixed salary basis.

We solicit the discussion of the Council as regards the method of making appointment to this position.

CANCER COMMITTEE

Request for funds of mailing expense.

COUNCIL ACTION

The following actions were taken and motions made during the consideration of the Committee's report:

a. It was moved by Councilors Cook-McIntyre that it was consensus of the Council that renewed activity be featured in the conducting of councilor district Post Graduate Conferences. That the supervision and direction and the formulation of the programs for these Post Graduate Conferences be delegated to the Secretary and the Chairman of the Council's Committee on County Societies.

b. It was moved by Cook-McIntyre that no honorarium per diem be allowed to speakers participating in these Conferences unless they are required to spend more than one day in fulfilling their engagement and that then an honorarium should be paid only for one day.

c. It was moved by Heavenrich-Urmston that when an honorarium for a speaker was to be paid, that the sum be limited to \$25.00.

d. It was moved by Treynor-Van Leuven that steps be taken towards encouraging these conferences at an early date.

e. It was moved by McIntyre-Urmston that the Chairman of the Council's Committee on County Societies and the Secretary be authorized to cooperate with the Director of the Department of Post Graduate of Medicine of the University of Michigan for the purpose of accomplishing a continuation and extension of Post Graduate Courses and that these two representatives confer with Doctor Bruce for that purpose.

f. On motion of Perry-Hafford the report of the Joint Committee on Public Health Education was accepted and that the Society's representatives on the Joint Committee be directed to support the plan of county activities and urge its active promotion in every county.

g. Councilors voiced sincere appreciation for the contribution of \$7,500.00 made by Mr. Tracey W. McGregor to defray expenses of the work of our Committee on Economics and for the efforts reflected by Doctor Bruce in securing this contribution. Upon motion of Carstens-McIntyre the Secretary was directed to send to Mr. McGregor and to Doctor Bruce an expression of the Council's appreciation and thanks.

h. Upon motion of Cook-McIntyre the Secretary was directed to address a communication to all officers of the Society and to all chairmen and members of Society Committees calling to their attention the provisions of our By-Laws in regard to the publication of interviews, the imparting of information and the release of reports before official action had been reported by the House of Delegates or the Council when acting in behalf of the House of Delegates and to urge that strict compliance with an adherence to these provisions be featured in all matters pertaining to organizational activities or organizational problems.

i. Upon recommendation of President-Elect Smith and by motion of Councilors Heavenrich-McIntyre the Secretary was directed to transmit the foregoing action in a week-end table to our commission that is now in England.

j. There was a prolonged discussion upon the questions raised by the Crippled Children's Commission. It was evidenced that there was need in the Upper Peninsula for a competent and adequately trained orthopedic surgeon and that such a man was not at present available from among the profession of the Upper Peninsula. It was further represented that the local pro-

fession of the Upper Peninsula would welcome an orthopedic surgeon under certain limitations and conditions. It was further demonstrated that there were not a sufficient number of orthopedic cases in the Upper Peninsula to support an independent orthopedic man. It was further imparted that the expenses placed upon counties for sending in cases to the Lower Peninsula were excessive. It was also revealed that the profession of the Upper Peninsula would welcome the educational and training benefit that would come to them by having a qualified orthopedic surgeon located in the Upper Peninsula.

Upon motion of Manthei-McIntyre the Council endorsed the plan of a full time orthopedic surgeon for the Upper Peninsula provided he was employed by the Commission under the same terms that govern the present full time pediatrician who is now a resident in the Upper Peninsula under the supervision of the Medical Department of the University of Michigan and that his teaching and consulting activities be under such control and in agreement with the wishes and actions of the officers of the Upper Peninsula's Medical Society.

k. Upon motion of Boys-Cook the Council referred back to the Crippled Children's Commission the problem of fee schedule.

l. Upon motion of Van Leuven-Perry the problem of tubercular child was discussed and the Council recommended that only the tubercular child with orthopedic complications should become a ward of the Crippled Children's Commission and that the tubercular child with non-orthopedic complications be continued under the present arrangements and care of the tuberculosis organizations.

16. Upon motion of Boys-Treynor the report of the Council's Committee on County Society activities was adopted as read and amended by the foregoing motions.

17. The Finance Committee's Report was as follows:

- That the financial report of the Secretary, accompanied by the auditor's report, be adopted.
- The Council devoted much time to the discussion of the budget for 1934.
- Upon motion of McIntyre-Urmston the dues for 1934 were placed at \$8.50 per member.
- Upon motion of Powers-Brunk the following budget for 1934 was adopted:

Income	
3,200 Members @ \$8.50.....	\$27,200.00
Interest	1,200.00
	<u>\$28,400.00</u>

Appropriations	
Defense Fund \$1.00.....	\$ 3,200.00
Journal Subscriptions \$1.50.....	4,800.00
Rent, Phone and Light.....	1,400.00
Annual Meeting.....	750.00
Post Graduate Conferences.....	750.00
Committee Expenses.....	500.00
Legislative Committee.....	1,500.00
Council Expense	1,200.00
Postage	450.00
A. M. A. Delegates.....	300.00
Stenographic	2,500.00
Society Expense.....	1,500.00
Secretary	4,000.00
Notes Payable	2,500.00
Committee Reserve.....	400.00
Economics Committee.....	500.00
Contingent Fund.....	2,150.00
	<u>\$28,400.00</u>

Journal Budget Income	
Advertising	\$ 6,000.00
Subscriptions	4,800.00
	<u>\$10,800.00</u>

Expenses	
Printing	\$ 7,000.00
Editor	2,250.00
Editor's Expenses.....	500.00
Reserve	1,050.00
	<u>\$10,800.00</u>

e. The Council considered the budget presented by the Economics Committee. The Secretary was directed to return to the Economics Committee this budget with the request that it be reviewed and presented to the Executive Committee at its next meeting.

f. Upon motion of Urmston-Heavenrich, the Committee on Economics was requested that when it reviews its budget it give consideration and include an honorarium for Doctor Luce for the purpose of compensating him for fixed expenses that continued during his absence.

g. Upon motion of Boys-Carstens the request of the Cancer Committee for a postage appropriation was approved.

h. Upon motion of Perry-Hafford the Treasurer's report was adopted.

i. Upon motion of Heavenrich-Cummings the Secretary's salary was continued at \$4,000.

j. Upon motion of Cook-McIntyre the Editor's salary was fixed at \$2,250 and an allowance of \$500 for postage and stenographic services was made.

k. Upon motion of Carstens-Van Leuven the report of the Finance Committee with the foregoing comments and actions was adopted.

ANNUAL MEETING

18. Upon motion of Boys-Manthei the dates for the 1934 Annual Meeting in Battle Creek were fixed as September 12, 13 and 14.

ELECTIONS

19a. Upon motion of McIntyre, supported by many, F. C. Warnhuis was unanimously elected as Secretary for the ensuing year.

b. Upon motion of McIntyre-Heavenrich, J. H. Dempster was unanimously elected Editor for the ensuing year.

c. Upon motion of Perry-Van Leuven, Wm. A. Hyland was elected Treasurer for the ensuing year.

d. Upon motion of Hafford-Cummings, the election of members to constitute the

Medico-Legal Committee was referred to the Executive Committee of the Council with power to act.

20. Upon motion of Hafford-Treynor, the question of employing reporters for the scientific sections was referred to the Executive Committee of the Council with power to act.

No further business being introduced and there being no further business to come before the Council, the Council adjourned upon motion of Van Leuven-Powers.

(Signed) F. C. WARNSHUIS,
Secretary.

COUNTY SOCIETIES

BAY COUNTY

The annual meeting of the Bay County Society was held Wednesday evening, December 13, 1933, at the Hotel Wenonah. Retiring President Huckins called the meeting to order with forty-seven members present. As has been the custom in Bay County for many years, the members were the guests of President Huckins at a full-course turkey dinner.

The program of the evening was featured by the address of Dr. George LeFevre, President of the Michigan State Medical Society.

The annual report of the Secretary-Treasurer was made and accepted, as were the reports of the standing committees.

Officers were elected for 1934 as follows:

President, Dr. J. H. McEwan; president-elect, Dr. S. L. Ballard; secretary-treasurer, Dr. L. Fernald Foster; censors, Doctors R. N. Sherman, A. W. Herrick, V. H. Dumond; medico-legal officer, Dr. A. W. Herrick; permanent delegate, Dr. L. Fernald Foster; alternate delegate, Dr. E. S. Huckins.

Committee appointments are as follows:

Executive Committee.—Dr. J. H. McEwan, chairman; Dr. S. L. Ballard, Dr. L. F. Foster, Dr. P. R. Urmston, Dr. R. N. Sherman, Dr. M. R. Slattery, Dr. C. S. Tarter, Dr. E. S. Huckins, and Dr. V. H. Dumond.

Public Relations Committee.—Dr. R. C. Perkins, chairman; Dr. P. R. Urmston, Dr. E. C. Miller, Dr. P. R. Urmston, *ex-officio*, and Dr. L. F. Foster, *ex-officio*.

Legislative Committee.—Dr. J. C. Grosjean, chairman; Dr. R. C. Perkins, Dr. M. R. Slattery, Dr. S. L. Ballard, Dr. J. H. McEwan, Dr. P. R. Urmston, *ex-officio*, and Dr. L. F. Foster, *ex-officio*.

Preventive Medicine Committee.—Dr. C. S. Tarter, chairman; Dr. W. G. Gamble, Dr. P. R. Urmston, *ex-officio*, and Dr. L. F. Foster, *ex-officio*.

Women's Auxiliary Committee.—Dr. L. F. Foster, chairman; Dr. J. W. Gustin, Dr. G. W. Brown, and Dr. P. R. Urmston, *ex-officio*.

The retiring president, Dr. Huckins, addressed the members on various subjects of society activities and solicited the same earnest coöperation for his successor.

The society adjourned to the home of Dr. Huckins, where "open house," including a buffet luncheon and cards, followed until the early hours of December 14.

L. FERNALD FOSTER, *Secretary.*

DELTA COUNTY

The annual meeting of the Delta County Medical Society was held at St. Francis Hospital, Escanaba, Michigan, at 5:00 P. M., December 7, 1933.

The following officers were elected for the ensuing year: President, Dr. A. J. Carlton; vice president, Dr. G. W. Moll; secretary-treasurer, Dr. W. A. Corcoran; trustee, Dr. A. S. Kitchen; medico-legal adviser, Dr. D. N. Kee; delegate to State Society, Dr. J. J. Walch; alternate, Dr. J. W. Towey.

After the business meeting a banquet was served by the Sisters of St. Francis, the piece de resistance being pheasant, which was generously provided by Dr. A. S. Kitchen.

W. A. CORCORAN, *Secretary.*

HILLSDALE COUNTY

The annual meeting of the Hillsdale County Medical Society was held at the Keefer House in Hillsdale on Wednesday, December 6, 1933, beginning with a dinner at 6:45 P. M., the president, Dr. Mattson, presiding.

The minutes of the last annual meeting were read and, as corrected, approved.

The treasurer's report was read and accepted.

Dr. Green, chairman of the committee appointed to confer with the Board of County Supervisors as to the care of the indigent, reported.

The Medical Service under the Emergency Welfare Relief and the plan of the State Emergency Welfare Commission were discussed. It was voted to give full coöperation with County Welfare plans for care of the indigent and the fee bill as presented by Dr. Mattson was accepted and adopted. Drs. H. F. Mattson, Luther Day, D. W. Fenton and G. W. Hanke were appointed as an advisory committee to confer with the County Welfare Commission.

It was moved, seconded and carried "That the 'Copeland Bill' be approved and the approval be put in the form of a resolution by the secretary and a copy of said resolution sent to our representative in Congress and to each of our senators from this state." A copy of the resolution is attached to this report.

Dr. Martindale gave a report as delegate to the State Medical Society.

It was moved, seconded and carried that the Hillsdale County Medical Society join the societies of Branch and St. Joseph Counties in their meetings during the ensuing year, and in addition hold its own regular quarterly meetings as heretofore.

The Society then proceeded to the election of officers for the year 1934, resulting in the retention of the present corps of officers for another year: Dr. H. F. Mattson, president; Dr. L. W. Day, vice president; Dr. D. W. Fenton, secretary-treasurer; delegate to the State Society, Dr. C. J. Poppen; Dr. B. F. Green, alternate.

D. W. FENTON, *Secretary.*

JACKSON COUNTY

The business meeting of the Jackson County Medical Society for December was held at Foote Memorial Hospital, Tuesday afternoon, December 12, at 4:30 p. m. After the minutes of the preceding meeting were read and approved, Dr. Ransom gave the treasurer's report. This was audited by Doctors Hungerford and O'Meara and approved. Dr. John Smith gave a brief report of the meetings of the board of directors for the year 1933.

The society then proceeded to the election of officers for the coming year. Dr. Clyde A. Leon-

ard, president-elect in 1933, automatically became president. Dr. John E. Ludwick was elected president-elect, Dr. R. H. Alter, secretary; Dr. F. G. Ransom, treasurer, and Doctors Don F. Kudner, E. D. Crowley and E. O. Leahy were elected members of the board of directors. Doctors Philip Riley and J. J. O'Meara were re-elected delegates to the state convention with Doctors Corwin S. Clarke and H. A. Brown as alternates. Dr. Leonard, following the precedent of preceding years, was named to act as the representative of the medical society at the Board of Commerce meetings. Dr. H. W. Porter was elected editor of the monthly *Bulletin*.

The application of Dr. F. J. Caldeira to become a member of the society was laid on the table until the truth of a rumor that he was leaving the city to enter the South American diplomatic service was verified. The applications of Dr. John Page and Dr. John W. Rice having been passed by the board of directors were voted on and passed, while the application of Dr. N. D. Wilson was rejected. The name of Dr. C. E. Tate of Vandercock Lake was reported out of the board and will be acted upon at the January meeting.

The matter of a pension fund of the society was brought up by Dr. Riley and seconded by Dr. Crowley with the provision that the board of directors for 1934 set the amount at their first meeting. This was carried unanimously.

The new officers were installed at a dinner party held on Thursday evening, December 14, at the Hayes Hotel. The speaker of the evening was Dr. Gus Dwyer, professor of Economics at Vanderbilt University. This talk was on economic conditions and was both amusing and instructive. Dancing followed as the other entertainment for the evening with music by Dr. Strong's orchestra.

R. H. ALTER, *Secretary*.

LIVINGSTON COUNTY

The Society met at the State Sanatorium on Friday evening, January 5, 1934. Following a dinner, we had the great pleasure of listening to Dr. William J. Cassidy, of Detroit, give an illustrated talk on "The More Common Diseases of the Urinary Tract and Their Surgical Treatment." Dr. Cassidy, in his usual capable manner, gave a thorough presentation of the subject, discussing the pathology with relation to symptomatology as a basis for rational therapy.

A short business meeting followed, and minutes of the December and November, 1933, meetings were read. No formal action was taken on any matter of importance. However, considerable discussion took place as to ways and means of arousing a more active interest on the part of a certain percentage of the membership who have been particularly careless in the matter of attendance. This is always an ever present problem among the smaller societies in Michigan as elsewhere. There were present but twelve members and five guests.

R. S. ANDERSON, *Secretary*.

MENOMINEE COUNTY

At our regular January meeting the following officers were elected: President, Dr. Ed. Sawbridge, Stephenson; vice president, Dr. J. T. Kaye, Menominee; secretary-treasurer, Dr. W. S. Jones, Menominee.

The following committees were appointed:

Legislative.—Dr. E. V. McComb, Dr. J. T. Kaye, and Dr. A. R. Peterson Daggett, all of Menominee.

Economics.—Dr. H. T. Sethney, Dr. S. C. Mason, and Dr. J. T. Kaye, all of Menominee.

Program.—Dr. E. Sawbridge, Stephenson; Dr. J. T. Kaye, Menominee, and Dr. W. S. Jones, Menominee.

At this meeting our Society went on record as willing to serve with the Emergency Welfare Relief Commissions for \$1.50 for house call and three-fifths of regular County Medical Society fee schedule.

M. S. JONES, *Secretary*.

MIDLAND COUNTY

On January 12, 1934, eight members of Midland County Medical Society held a meeting at the Country Club.

Officers for the year 1934 are: President, J. H. Sherk; secretary, E. J. Dougher.

Minutes of the previous meeting were read and approved.

Motion was made by C. V. High, Sr., and seconded by C. V. High, Jr., that we offer our protest against osteopaths receiving full State Emergency Welfare Relief. Carried.

Motion was made by Dr. Sherk and seconded by Dr. High, Sr., that we meet regularly at the Country Club on the second Friday of every month. Carried. Some one doctor will have a special subject for the meeting.

E. J. DOUGHER, *Secretary*.

MUSKEGON COUNTY

The annual meeting of the Muskegon County Medical Society was held December 8, 1933, at the Muskegon County Tuberculosis Sanitarium. Following dinner, the meeting was opened by Dr. Douglas, president.

Dr. Charles William Peers, of Holton, and Dr. Frank Diskin, of Muskegon, were elected to membership in the Muskegon County Medical Society. The report of the secretary and treasurer for 1933 was read and accepted. Dr. William LeFevre gave the report of the Public Relations Committee. The committee was asked to make the most favorable agreement possible and report at the next meeting.

The following officers were elected: President, Dr. V. S. Laurin; vice president, Dr. Harold Closz; secretary-treasurer, Dr. F. W. Garber, Jr.; delegate to state convention, Dr. R. H. Holmes; alternate, Dr. F. W. Garber; medico-legal adviser, Dr. Geo. L. LeFevre.

Dr. Laurin assumed the chair and acknowledged his election. Dr. Holmes recommended that the Society publish a bulletin covering its activities. A motion was passed that a committee be appointed to investigate and report back to the Society as to costs, etc.

A rising vote of thanks was tendered to Dr. Bartlett for his hospitality and the meeting adjourned.

F. W. GARBER, JR., *Secretary*.

NORTHERN MICHIGAN

The regular meeting of the Northern Michigan Medical Society was held at the Hotel Perry, Petoskey, January 11, 1934. The business of the evening was preceded by an excellent steak dinner. There were twenty members and two guests present. The meeting was called to order by Vice President Larsen. Minutes of the last meeting were read and approved. Correspondence was read.

The regular business of the evening was then omitted and the program turned over to the Program Committee. Doctor Conway then introduced Dr. I. H. Chilcott of Chicago, chief of staff, St. Francis Hospital. Doctor Chilcott then gave a very

interesting talk on "Venoclysis." He went into excellent detail in regard to all the various conditions, solutions, equipment and counter-indications for which this form of therapy might be used. The talk was very well given and enjoyed by all those present.

Dr. Wesley Mast was appointed to the Program Committee for next month.

E. J. BRENNER, *Secretary*.

SAINT CLAIR COUNTY

The annual meeting of Saint Clair County Medical Society was held at Port Huron Hospital, Port Huron, Michigan, Tuesday, December 19, 1933. Supper was served to twenty-one members at 6:30 P. M. The meeting was called to order by President D. J. McColl at 7:15 P. M. with twenty-five members and one guest present.

By direction of the president the reading of minutes was dispensed with to save time. Communications were read. The letter of the state secretary dated November 22, 1933, including the data pertaining to medical services under welfare relief was read by the secretary. The election of officers for the year of 1934 followed. Dr. A. B. Armsbury was elected president; Dr. J. H. Burley, vice president; Dr. G. M. Kesl, secretary-treasurer; Dr. A. L. Callery and Dr. T. E. DeGurse were reelected delegate and alternate, respectively, to the State Society, and the censors, Drs. A. J. MacKenzie, J. A. Attridge and E. W. Meredith, were elected for another year.

President McColl stated the Metropolitan Life Insurance Company, through its field representative, desired the Society to express an opinion as to the desirability of their nurse in this community attempting both non-communicable and communicable work at the same time. Dr. A. L. Callery, health officer of Port Huron, stated that he felt it unwise to do so. A motion was made, supported and carried instructing the secretary to address a letter to the company advising against a nurse attempting to care for communicable cases.

Dr. Heavenrich stated a recent decision of the Michigan Attorney-General anent fees allowed physicians for caring for afflicted adults. Doctor Patterson, chairman of the Committee for the Medical Care of the Indigent, reported a meeting to be held next Thursday, December 21, 1933, at the Hotel Harrington, Port Huron, Michigan, at which time the chairman of the Michigan Crippled Children's Commission would be present along with his committee and the Judge of Probate. All physicians interested were invited to attend at their own expense. Some plan of action was to be worked out if same was possible, for the care of afflicted minors at the local hospital.

President McColl informed the Society relative to the present status of medical care of afflicted and crippled minors in the community and also relative to Medical Welfare Emergency Relief. Dr. Waters and Dr. Burley reported such information as they were able to gather from twenty-six counties with regard to the plan of Welfare Emergency Relief in those counties. It seemed from this information that twenty-two of the twenty-six had some sort of arrangement now in force, the majority following the plan laid down by the State Society under date of November 22, 1933.

The secretary read the signed agreement of some of the members of the Society in which a pledge was made not to do Federal Emergency Relief until their Society approved of and entered into an agreement with the County Welfare Emergency Relief Commission. Dr. Cooper arose to explain why he

hadn't signed the pledge. Dr. Callery spoke about his views on the legality of the employment of a county physician to care for only a small part of the county. Dr. DeGurse and Dr. Johnson reported as to the fees they had received from the county for the care of medical indigents in their respective portions of the county.

Mr. Glassford and Mr. Rankin of the County Welfare Emergency Relief Commission were introduced to the Society by President McColl.

Dr. Waters read a brief summary of what had been accomplished in twenty-odd counties of Michigan with regard to Welfare Emergency Relief from a medical standpoint. Mr. Glassford arose and stated that he and Mr. Rankin were both willing to effect any possible arrangement for the medical care of the indigent insofar as was permissible under existing rules.

Dr. Heavenrich spoke of conditions in this locality and stated that all physicians of the county had been doing emergency relief during the past few years absolutely without any remuneration and that he believed inasmuch as the Federal Government had appropriated funds that the physicians of Saint Clair County should be given their share.

The secretary reread a portion of the instructions from the State Society, under date of November 22, concerning the agreement as to the medical welfare relief consummated at Lansing on November 21. Dr. McColl stated his views on medical relief and Mr. Glassford arose to state that he was informed that existing county physicians could not be discontinued without imperiling all relief the Federal Government was extending the county at the present time. He wished to make it clear that he, personally, was sympathetic with the medical profession and that he knew they were entitled to remuneration for their services. He felt he was more or less restricted, however, by regulations from State Headquarters.

A motion by Dr. Burley, supported by Dr. Heavenrich, was carried to the effect that the president appoint a committee of three to confer with Mr. Glassford and Mr. Rankin, with full power to act to effect some agreement for medical fees for the care of the indigent.

Mr. Glassford complimented Dr. LeGalley, county physician, on the splendid work and effort the latter was making at present to care for indigents requiring medical aid. Doctors Patterson, Callery and Cooper spoke of the huge volume of such work at the present and all stated that Dr. LeGalley could not possibly render adequate medical care to such a large number of patients. Mr. Rankin spoke of difficulties anent the authorization of medical care. He stated some sort of arrangement would have to be worked out. Dr. Waters read the plan of authorization now in effect in Wayne County.

President McColl called upon Vice President-Elect Dr. J. H. Burley, who thanked the Society for the honor conferred upon him and pledged himself to work for the good of the Society. Dr. DeGurse arose to say a few words in compliment to both Mr. Glassford and Mr. Rankin and stated that he felt both officials would be fair to both physician and citizen in handling welfare relief.

Dr. McColl, retiring president, said a few words in appreciation of the support the members of the Society had given to him during the past year and also that it had been a pleasure to serve as president. Dr. McColl then introduced President-Elect Dr. A. B. Armsbury, who thanked the Society for the honor conferred upon him and asked the support and coöperation of all members during the coming year. Dr. Armsbury then appointed a committee consisting of Drs. Waters, Patterson and Burley to confer with Mr. Glassford and Mr. Ran-

kin as authorized by the motion referred to above.

A rising vote of thanks was given to Mr. Glassford and Mr. Rankin by the Society for their spirit of cooperation in attending the meeting.

Doctor Heavenrich arose to state that the Society was breaking the law and assisting the hospital in breaking the law in giving supper to the Medical Society and stated three directors of the N. R. A. had spoken to him as local chairman of the Port Huron N. R. A. about the matter of receiving complaints from local restaurant owners concerning the same. He made a motion, supported by Dr. De Gurse, that future meetings of the Society be held at the Hotel Harrington. This motion was carried without a record vote. Meeting adjourned at 9:30 P. M.

GEORGE M. KESL, *Secretary-Treasurer.*

WOMAN'S AUXILIARY, MICHIGAN STATE MEDICAL SOCIETY

MRS. ELMER L. WHITNEY, President
18224 Wildemere Ave., Detroit

MRS. C. L. STRAITH, Secretary-Treasurer
19305 Berkley Road, Detroit

The following is a message to the Woman's Auxiliary to the Michigan State Medical Society from the Advisory Council, Dr. Theo. Heavenrich, Port Huron, Mich.

"My message is a wish that your future years will be productive of as much good as the past years have been under the able leadership of your past presidents.

"In my rambles about the state, and in my own home county I find that many think your organization is one for social endeavor only. Knowing what you have accomplished, I can subscribe to the statement that this is absolutely wrong. That you have done much and are doing more, is the true light in the matter, and with this knowledge I am urging your members to foster diligent work in those counties as yet unorganized. I have noticed that in the counties where you have units there is closer and more cordial cooperation of the doctors' wives than elsewhere."

BAY COUNTY

At the December meeting of the Woman's Auxiliary to the Bay County Medical Society, the following officers were elected: President, Mrs. C. M. Swantek; first vice president, Mrs. L. F. Foster; second vice president, Mrs. M. R. Slattery; secretary, Mrs. A. L. Ziliack; treasurer, Mrs. H. M. Gale; corresponding secretary, Mrs. E. C. Miller. The committee chairmen are as follows: Program, Miss Marian Moore; Hospitality, Mrs. Walter Stinson; Telephone, Mrs. Kenneth Stuart; Publicity, Mrs. E. C. Miller.

The above officers were elected to hold office until May, 1935, in this way coinciding with the election of the other counties in the state.

(Mrs. E. C.) JOSEPHINE S. MILLER, *Publicity Chairman.*

CALHOUN COUNTY

For many years it has been the custom of the Calhoun County Medical Society to entertain their wives at a dinner and entertainment on the occasion of their annual meeting in December. This year the dinner was given at the new Kellogg Hotel and was a decided success from every viewpoint.

There were over one hundred reservations and more came in for the program which followed the dinner. There was music by the Kellogg Saxophone Orchestra; a short talk by Mrs. M. G. Capron, president of the Auxiliary, on the work accomplished during the year; a sketch by Dr. Wilfred Haughey on the early beginning and continued activities of the Calhoun County Society containing valuable historical information and many interesting sidelights; and a delightful hour with Mr. Harry Cecil, of Detroit, sleight of hand performer.

Dr. Carl G. Wencke presided and Dr. Harry G. Knapp was program chairman.

The Auxiliary put on its annual rummage sale in November with Mrs. Mustard and a capable committee in charge. With rummage scarce and prices unusually low, ninety dollars was taken in. This money is to be used to further the welfare work which the society has undertaken.

Mrs. H. M. Lowe has called together one group of the Auxiliary to make up another lot of maternity kits for indigent expectant mothers. The kits contain the absolute necessities for mother and baby at the time of confinement and also a few things which make the doctor's work easier and safer. They were made in the beginning at the suggestion of the nurses who are familiar with this phase of welfare work and its needs, and have proved to be nothing short of a godsend to all concerned.

Tentative plans are already being made for the entertainment of the State Auxiliary here next fall. It is the ambition of the local society to make the social as well as the business part of the meeting something to be remembered.

(Mrs. W. H.) EDITH COWLES HAUGHEY, *Publicity Chairman.*

INGHAM COUNTY

The fall activities of the Woman's Auxiliary to the Ingham County Medical Society were started in October with a reception and tea at the home of the president, Mrs. D. A. Galbraith. Also, in October, sewing was done at the hospitals by members of the organization.

In November, a Thanksgiving bridge luncheon and shower of fruits, jellies and vegetables was held at the East Lansing home of Mrs. John Wetzel. The donations were divided and taken to the various hospitals.

A Christmas party was given in December for the children of the members at which the guests were entertained with moving pictures. The Christmas tree and gifts were afterward taken to the children in the city hospital.

The officers this year are: President, Mrs. D. A. Galbraith; vice president, Mrs. John Rulison; secretary and treasurer, Mrs. George Bauch.

The membership of the Auxiliary is ninety.

(Mrs. D. M.) MILDRED SNELL, *Publicity Chairman.*

OAKLAND COUNTY

On December 20, 1933, the Woman's Auxiliary to the Oakland County Medical Society entertained the Oakland County Medical Society at a Christmas party. About fifty guests enjoyed the beautifully decorated ball room of the Casa del Rey in Pontiac. Santa Claus distributed gifts from a large Christmas tree. Miss Betty Fiske gave several lovely dancing numbers. After dancing and bridge, a box lunch added merriment to the occasion.

The next Auxiliary meeting will be held on January 26, 1934.

(Mrs. R. H.) HELEN C. BAKER, *Publicity Chairman.*

KALAMAZOO COUNTY

The first fall meeting of the Kalamazoo Woman's Auxiliary was held on November 21, 1933, with thirty-one members present. An evening of social fellowship was enjoyed.

The officers are: President, Mrs. R. J. Hubbell; president-elect, Mrs. C. L. Bennett; first vice president, Mrs. W. W. Lang; second vice president, Mrs. C. B. Fulkerson; secretary and treasurer, Mrs. H. H. Stryker.

On December 19, the Auxiliary members were guests of their husbands at a dinner meeting of the Academy of Medicine followed by an excellent program at which Dr. Warnshuis, secretary of the State Medical Society, and Dr. Ernest Harper, local director of Welfare activities, were the speakers. Places were laid for 125.

(Mrs. C. B.) CORA KIER FULKERSON, *Publicity Chairman.*

SAGINAW COUNTY

The Woman's Auxiliary to the Saginaw County Medical Society held its annual meeting December 19, 1933, at Adam's Inn, Saginaw, with thirty-six members present. Dinner was served at 6:30, the tables being decorated with Christmas greens and red candles, after which a business meeting and election of officers was held, the president, Mrs. L. A. Campbell, presiding. Reports were given by the various officers and committee chairmen. Announcement was made of the appointment of Mrs. L. C. Harvie as publicity chairman to the Michigan State Medical Society.

We found in the reports that a great deal had been accomplished during the year. We had made over 200 garments for the Saginaw hospitals and mended about fifty. We had held a subscription bridge dinner, the proceeds of which were used to purchase Hygeia for nearby rural schools. We had a talk by our Saginaw County Medical Society president, Dr. F. J. Cady, at one of our meetings, and our State Auxiliary president visited us at a meeting early in the year. A better spirit of friendliness had been established among our thirty-five to forty members. We had 100 per cent attendance at November and December meetings. At the request of our State president we voted to have our annual meeting in May in the future.

The election of officers resulted in the following: Presi-

dent, Mrs. J. A. McLandress; vice president, Mrs. Walter Slack, secretary, Mrs. M. G. Butler; treasurer, Mrs. Herbert Kleekamp.

The following committee chairmen were appointed: Public Relations, Mrs. W. H. Pickett; Hygiene, Mrs. J. H. Powers; Legislative, Mrs. F. J. Cady; Flower and Sick, Mrs. H. J. Meyer; Membership, Mrs. W. K. Anderson; Custodian, Mrs. L. A. Campbell; Entertainment and Publicity, Mrs. Robert Jaenicke.

After the business meeting, bridge was played, prizes being awarded to Mrs. Dale Thomas, Mrs. S. A. Sheldon and Mrs. Frank Poole.

Out of town members present were Mrs. John Maurer, of Reese, Mrs. Ostrander, of Freeland, Mrs. Sarles and Mrs. Kauffeld, of Frankenmuth.

(Mrs. J. A.) ZUELA B. McLANDRESS, *Publicity Chairman*.

WAYNE COUNTY

The activities of the Woman's Auxiliary to the Wayne County Medical Society in 1934 followed as close upon the heels of the old year as possible, as the board meeting was held in the club house on January 2.

Tuesday, January 9, saw the fulfillment of a long anticipated event, for on that day Malcolm Bingay, prominent newspaper man and honorary member of the Wayne County Medical Society, was guest speaker at the regular monthly meeting. His subject was, "The World's Neurosis." Dr. Alexander W. Blain, president of the Wayne County Medical Society, introduced the speaker.

The business meeting was followed by music, and after tea a what-not and bake sale was held. Mrs. Chas. D. Toole, Mrs. G. B. Ohmart, Mrs. Clarence E. Weaver, and Mrs. Leon H. Hirsch were hostesses on this occasion.

Before the holidays (on December 13) a luncheon was given by the Fort Shelby Hotel in connection with the J. L. Hudson Co.'s exhibit of "The Doctor." The guests included some members of the Wayne County Medical Society and its Auxiliary. Among those present were Dr. Alexander W. Blain, president of the society, and Mrs. Blain; Dr. Claire L. Straith, and Mrs. Straith, president of the Woman's Auxiliary; Mrs. Frank W. Hartman, vice president of the same organization; Dr. and Mrs. A. O. Brown; Miss Nellie B. Christian, superintendent of the District Nurses' Association; and Miss Alice Guysi, supervisor of art in the Detroit public schools.

Miss Retta Clark, of Toledo, grand-niece of Sir James Clark, the physician in the picture, and Mr. John Paulding, sculptor of the three-dimensional version, were the honor guests. This life-sized sculpticolor is the property of the Petrolagar Laboratories of Chicago and was brought to Detroit from the World's Fair.

After the luncheon Miss Clark told some incidents in the life of her famous uncle; and Mr. Paulding told about the sculpturing of the picture.

The children's party given by the Wayne County Medical Society and the Auxiliary on December 16 proved such a success that it was followed with a 'teen-age party on Friday, December 29. This party took place in the Wayne County Medical club house between the hours of 8:30 and 11:30 in the evening. All the young folks of the membership were invited and each was privileged to bring one guest.

An orchestra furnished music for dancing, and the entertainment included a magician who provided many surprises, and a specialty dance by Frances and Georgina Merrill, daughters of Dr. and Mrs. W. O. Merrill. These young ladies are twins, and were most attractive in their extremely different costumes as they danced the "New Yorker" and "Minuet" respectively.

For some time the ladies of the Auxiliary have been looking forward to the Study Group course on Ancient Medicine under the direction of Mrs. J. Milton Robb.

The first lecture was delivered on Monday, January 13, by Dr. Lawrence Reynolds, and consisted of an outline of the period to be covered, which is medicine in the Ancient World up to the time of Harvey.

There is no charge for the course, and all doctors' wives are invited, whether they are members of the Auxiliary or not. The class will meet on six consecutive Monday evenings at 8:30 in the Wayne County Medical club house.

Mrs. CLIFFORD LORANGER, *Publicity Chairman*.

GENERAL NEWS AND ANNOUNCEMENTS

President-elect R. R. Smith will spend a few weeks in Florida.

The annual meeting dates are September 12 to 14, and the place is Battle Creek.

Read the Council Minutes published in this issue and also an opinion of the Attorney General.

Your 1934 dues are payable. See your county secretary before April 1. The State dues are \$8.50.

Dr. F. C. Warnshuis was the guest speaker of the Academy of Medicine of Nashville, Tenn., at its annual banquet on January 2. Dr. Warnshuis has also been invited to speak at the General Session of the California State Association on May 1.

The Beaumont Foundation Lectures for 1934 will be held under the auspices of the Wayne County Medical Society, February 19 and 20, in the auditorium of the Detroit Institute of Arts. The speaker as announced is Dr. John F. Fulton, Sterling Professor of Physiology, Yale University School of Medicine. The title of the lectures will be "Studies of the Functions of the Cerebral Cortex in Primates." A cordial invitation is extended to every member of the Michigan State Medical Society.

The program of the general meeting of the Wayne County Medical Society, January 15, consisted of addresses by President George Le Fevre; President-elect Richard Smith of the Michigan State Medical Society; Dr. Burton R. Corbus, chairman of the Council and Dr. Frederick C. Warnshuis, Secretary of the society. All four addresses are important as presenting the policy of the state society as well as the functioning of the society in carrying on the work of the organized profession. The meeting was held too late to permit the printing of the addresses in the February number of the JOURNAL. They will appear in the March issue.

The editor has been requested to draw special attention to a paper which appeared in the January number of this JOURNAL, namely that on the "Practice of Medicine in Germany," by Dr. Arthur H. Mollman of Grand Rapids. Dr. Mollman has practiced in Germany and also in Michigan. The paper describes "State Medicine" as it is practiced in Germany as viewed by Dr. Mollman.

We have received a reprint of fifty pages of an article on "The Intra-Ocular Colour-Filters of Vertebrates," which appeared in the November-December, 1933, numbers of the *British Journal of Ophthalmology*. The authors are G. L. Walls of Ann Arbor and H. D. Judd of Detroit. This work was begun under the Alfred H. Lloyd Fellowship held by Mr. Walls at the University of Michigan, 1931-1932, and completed during his time a National Research Fellowship, 1932-1933. H. D. Judd is associated in physical optics with Dr. Ralph H. Pino, Detroit.

The attention of contributors to this JOURNAL is called to the conditions under which papers are accepted for publication (see the first page of the editorial department of the JOURNAL); particular attention is directed to the requirements for illustrations. The briefer papers of merit are acceptable to this or in any other similar publication. Contributions should be limited to approximately ten pages, paper 8½x10½, which is the standard size, typewritten and double spaced. It goes without saying, "If this rule were adhered to as close as possible, a greater number of contributors might be accommodated." The cost of half-tone illustrations has been increased approximately twenty per cent because of the NRA code provisions. Authors are billed only for the actual cost price which the JOURNAL has to pay the engravers for the illustrations that accompany the papers.

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BLOOD CHEMISTRY IN NEPHRITIS*

WILBER E. POST, M.D.†

CHICAGO

About seventeen years ago it was my privilege to discuss certain phases of blood chemistry in nephritis before this Society. You have been good enough to ask me to discuss the subject today and I acknowledge the honor with sincere thanks. As the years have passed, I have been greatly impressed by the great amount of work required—months, years, or a life-time of work—to establish some simple law of procedure in medicine which may finally be stated in a sentence and followed by all without the need of elaborate laboratory tests in every individual case. In fact, I fear that the error is sometimes made of doing an unnecessary lot of elaborate laboratory work in routine practice and thereby raising the high cost of medical care. It is well for us to keep in mind that tests are to be made for the good of man, and not man for the good of the tests!

An exhaustive discussion of blood chemistry in nephritis is obviously impossible on

this occasion. It seems appropriate, therefore, to limit ourselves to a discussion of those phases of blood chemistry which are of importance to the physician in his management of the various types of nephritis—or, as I would prefer to say, the various types of *Bright's Disease*. Even so, the list of subjects is rather long and most of them well understood by many of you. A part of my object shall be to suggest how we may shorten the list in practice without de-

*Read before the Michigan State Medical Society, September 14, 1933.

†Dr. Wilber E. Post is clinical Professor of Medicine, Rush Medical College, University of Chicago. He is attending physician of the Presbyterian Hospital, Chicago.

priving the patient of benefits. Our first object should be, however, to discuss what facts are to be derived from blood chemistry that are essential or of importance to the best management of the disease under consideration.

The list of subjects includes:

1. The ability of the kidneys to concentrate the substances excreted in the urine.
2. The Urea Clearance Test.
3. The Phenolsulphonephthalein Excretion Test.
4. The estimation of the non-protein nitrogen substances in the blood.
Creatinine
Uric Acid
Urea
Total non-protein nitrogen
5. The determination of the acid-base equilibrium by estimation of chloride and CO_2 (carbondioxide) content of the blood, and perhaps an estimation of total base; occasionally calcium and phosphorus estimations.
6. The estimation of the plasma protein and urinary protein. It is interesting but not essential to management to have the fractional values of albumin and globulin.
7. The estimation of cholesterol of the blood.
8. A group of tests requiring simpler technic and the results of which can be used to some extent in lieu of the more elaborate procedures. I refer to the estimation of hemoglobin and red cell count; the relative volume of red cells and plasma; the volume of the blood; the absorption time of intradermally injected salt solution, or the plasma thirst test of Thomas; the oxidation time of methylene blue solution injected into skin; quantitative estimation of urinary protein. All of these are easily available for use by the practising physician at comparatively little expense for study and equipment.

The mention of such a lot of laboratory work in many of our cases of Bright's Disease seems impracticable because of expense and because facilities may not be available. Even in these hard times we may be thankful that the facilities are far more generally available than ever before; and in regard to the expense—I think the spirit to do what is really needed for the patient motivates the physician of our day as well as our noble predecessors. Further than that the physician can inform himself of what others have learned by long arduous investigative studies, and then make use of what is known to occur in the different phases of Bright's Disease, without the necessity of elaborate laboratory work.

Let us see how the knowledge of all of this blood chemistry and related procedures works out in the various types of Bright's Disease and allied conditions.

In the acute hemorrhagic, or glomerular form, there is usually an acute onset from

infection. It is discovered by the appearance of generalized edema, or by the finding of scanty urine containing variable amounts of albumin and blood and various numbers of hyaline, granular, epithelial, and blood casts. Broad "renal failure" casts are found in the terminal stage. We know that the kidney function is impaired and there is a variable degree of NPN retention, and retention of acid products of metabolism (phosphoric and sulphuric). Not only the kidneys are injured, but also the blood vessels (*i.e.*, arterioles and capillaries) and the body tissues in general. The blood-pressure is usually increased and there may be edema. In brief, the chief immediate problem is acute infection and its toxic effects on kidneys, blood vessels, tissue cells of the body in general, including those of the brain and the retinae. We need to know nothing further in order to institute the best known management. What do we do? We eliminate the source of infection as it is possible to do so. We give abundant fluids with orange juice and sugar to dilute the toxins and aid excretion. We give them by mouth unless the patient is vomiting, and we give water and alkali and glucose by rectum or the subcutaneous or intravenous route if there is vomiting. If there is edema sodium salts are avoided except at the beginning of management when it is needed to rapidly neutralize acids. Magnesium and potassium salts are given if the case is mild and the oral route is used. If there are ominous signs of cerebral irritation from vascular spasm or edema, 2 per cent magnesium sulphate or 50 per cent glucose is given intravenously with appropriate precautions. Sweating may help to relieve vascular spasm or reduce edema. However, if sweating is too drastic there may be too great a loss of chloride through the skin and dehydration produced with marked weakness and vomiting and muscle cramps. Rest is important and sedatives may be justifiable. If there is cardiac deficiency, digitalis or strophanthus or squills is needed.

After the initial stage of acute glomerular (hemorrhagic) Bright's is passed, we would like to know how much damage to the kidney has been done. The work of Ambard, and of Möller, McIntosh, and Van Slyke has shown us that the most sensitive indicator of renal damage is the determination of the number of cubic centimeters of blood per minute cleared of urea by renal excre-

tion—called the “Blood Urea Clearance” Test. In my experience this is the most helpful of all blood chemistry estimations in Bright’s Disease. As many of you know, the normal average number of cubic centimeters of blood cleared of urea per minute is 75 if the average urinary excretion is more than 2 cubic centimeters per minute; and 54 cubic centimeters of blood is cleared per minute if the urinary excretion amounts to less than 2 cubic centimeters per minute. According to Van Slyke et al, “the blood urea clearance falls to 50 per cent of normal or less in most cases of acute hemorrhagic Bright’s Disease. A consistent return toward normal must be observed within four months if the prognosis is to be good. If the condition becomes latent the blood urea clearance should be normal and the patient symptom-free, but there remains blood in the urine. In the chronic active stage the blood urea clearance varies from 60 per cent to 40 per cent of normal for a year or so and then falls to lower levels as the terminal stage is entered. In the terminal stage the urea clearance is less variable and falls below 20%. The non-protein nitrogen substances accumulate in the blood and the specific gravity of the urine is fixed. With the urea clearance permanently below 20 per cent of normal the term of life is limited to a few months up to two years. The symptoms of uremia are never present when the urea clearance is above 10 per cent and never absent when it is below 5 per cent.” In general the urea clearance is an indication of the proportion of glomeruli destroyed, or, at least, not functioning.

Compared with simple blood urea estimations, the blood urea clearance must be below 50 per cent of normal before the urea content of the blood rises above the normal of 23 mgm. urea nitrogen per 100 c.c. of blood. With urea clearance between 20 per cent and 40 per cent of normal, a half of the cases show blood urea content normal, especially if on a low protein diet. With the urea clearance below 20 per cent, nearly all of the cases show a rise in blood urea. Clinical observations show that the urea clearance values give a truer indication of the progress of kidney damage than the blood urea content.

The clearance of the blood of creatinine may be used similarly as the blood urea clearance. The normal creatinine content of

the blood is 1.5 mgm. to 2.0 mgm. per 100 c.c. The protein content of diet causes less variation in creatinine values than in urea values. But in the experience of Dr. Hoffman and myself there is little or no practical advantage in the test.

The phenolsulphonephthalein excretion test is less sensitive than the blood urea clearance test, as an indication of progressive impairment of renal function. As shown by the results obtained by Van Slyke and his associates, the blood urea clearance may fall below normal weeks or months before the phthalein excretion falls below its normal of 55 per cent in two hours when injected intravenously. Also, the value of the phthalein excretion rises sooner than the “urea clearance” values when there is recovery from an acute Bright’s. The two are more closely parallel when the renal damage is extensive. In general it is our experience that if a three-hour excretion time is used, a delay in excretion is more easily noted and is a further indication of impairment of renal function. Obviously the advantage of the phthalein test is its simplicity so that it may be used in office or home. When considered in conjunction with the clinical history and clinical condition of the patient, the hemoglobin, the red cell count of the blood, and the urinary findings, the phthalein excretion test is fairly satisfactory.

In cases of prostatic hypertrophy with retention of urine two facts must be borne in mind: First, in the phthalein test the urine containing phthalein is both diluted and retained in the bladder so that the test is not practicable unless a catheter is used (in my practice there must be much more than simple curiosity to justify use of a catheter); second, the urea concentration of the urine retained in the bladder is about the same as that excreted during the test so that the urea clearance test is fairly practicable. However, when there is infection of the retained urine, results of this test are obviously valueless.

The ability of the kidney to concentrate urine is recognized as the most fundamental function to be impaired by renal damage. Fixation of specific gravity of the urine at a low point and equalization of the day and night excretion are the principal manifestations. Based upon this observation, two tests of renal function of very practical

value have been devised—one by Hedinger and Schlayer, modified by Mosenthal; the other by Addis, modified by Fishberg. The Mosenthal Test provides that the dietary for one day include an adequate supply of protein (13.4 g. N.), salt (8.5 g.) and fluid (1800 c.c.), with purines in meat, soup, tea, and coffee, divided into three meals at 8:00 A. M., 12:00 noon, 5:00 P. M., with no food nor fluids between meals nor during the following night. The urine is collected at 2-hour intervals from 8:00 A. M. to 8:00 P. M. and for the 12-hour period during the following night. In the normal the specific gravity varies at least 10 points; the specific gravity of the night urine is 1.018 or more; the total quantity of the 12-hour day urine is three to four times that of the 12-hour night urine. As the renal lesion progresses the specific gravity becomes fixed at low levels, and the quantity of night urine tends to become equal to the quantity of day urine. The same phenomena are also observed in other conditions than primary renal disease such as ureteral calculi, cystitis, pyelitis, prostatitis, marked anemia, diabetes insipidus. On the other hand in myocardial decompensation the specific gravity is fixed at higher levels.

In the test suggested by Addis and Fishberg, the fluids are restricted to 1200 or 1500 c.c. for a day. The evening meal contains a high protein content and only 200 c.c. of fluid. No food nor fluid is given during the night. The bladder is emptied at 8:00 A. M., 9:00 A. M., and 10:00 A. M. The specific gravity of at least one of the specimens should exceed 1.025. With increasing renal impairment the maximum specific gravity diminishes until in renal failure it becomes 1.007, which is the specific gravity of protein-free blood plasma. A maximum specific gravity below 1.020 is of serious significance and is of use in revealing renal impairment early in its course. In patients with edema and in whom the edema fluid is being released the maximum specific gravity may be low without grave significance. As with the Mosenthal method, this test serves as a means of differentiating between renal impairment and extra-renal conditions such as cardiac decompensation, in which the phenolsulphonaphthalein excretion and the urea clearance may be diminished and the non-protein nitrogen of the blood increased.

Besides the previously mentioned conditions associated with low specific gravity of the urine and which may be misleading in the results of the concentration test, one should keep in mind that chilling of the patient, or undue perspiration, or diarrhea, or vomiting, or mental excitement may influence the results. However, both the simplicity of the test, and its general reliability make it one of the best tests of renal damage.

There are other determinations which are helpful in the conduct of management in various phases of Bright's Disease.

When edema develops and the amount of albumin in the urine is large, one desires to know the protein content of the blood plasma, the hemoglobin and red cell count, the relative red cell and plasma volume, the quantity of protein excreted in the urine, the absorption time of intradermally injected salt solution (McClure and Aldrich), the basal metabolic rate, and the cholesterol of the plasma. However, *these are means of estimating the nature and degree of pathology outside of the kidney* which one sees in Bright's Disease, and which is associated with kidney disease but not due to kidney disease so far as I know. For the purpose of our discussion, we may consider that this extra-renal pathology is manifested in two forms: First, damage of the tissue cells and the blood, resulting in edema, lowered plasma protein, disturbance of water and of mineral balance, and in marked albuminuria; or, second, damage of the blood vessels (*i.e.*, arterioles and arteriolar capillaries), resulting in hypertension and the manifestations of impaired respiratory processes (*i.e.*, ischemia) in various parts of the body, and in hemorrhages. The nephrotic phase of a chronic glomerular nephritis (Hemorrhagic Bright's) means to me the same general process in the tissues as nephrosis, and added to the nephrotic syndrome is vascular damage. There is very little or no vascular damage in nephrosis. And please note that there are very few cases of pure nephrosis recorded.

Investigations by Epstein, and by Thomas, Hektoen, Andrews, and Welker indicate a possible explanation of the mechanism of proteinuria that is very helpful to my understanding of most of these tests of the extra-renal pathology of Bright's Disease. In brief it is this: The toxins of infectious,

or non-infectious, origin damage the tissue cells; the proteins are broken down and the toxic portions resulting combine with the serum albumin, forming a protein abnormal to the circulation. The kidneys excrete this abnormal protein.

With this in mind the estimation of the protein content of the blood plasma means more than a formality. It is a measure of tissue damage and, to a certain extent, of the state of metabolism in the tissues, and of protein deficit in diet, as well as an indication of the likelihood of edema or of the excretion of albumin in the urine. With exceptions, decrease in protein content of the plasma parallels the development of anemia and the decrease in relative red cell volume, and decrease of absorption time of intradermally injected salt solution.

The normal protein content of the plasma is 7 grams per 100 c.c. Of this about 4.3 grams is albumin and 2.7 grams is globulin. When serum protein is diminished it is the albumin fraction that is lowered. When the total protein is reduced to 5 grams per 100 c.c. edema develops only if there is circulatory or other complication. With total protein of less than 4 g. or the albumin less than 2 g. per 100 c.c., edema is present in most cases. In our own experience, edema has been eliminated from a patient in whom the albumin was 1.36 g. per 100 c.c. by washing the sodium from his tissue fluids.*

One of the satisfactions to come from estimation of plasma protein is that its level may be maintained to a fair degree by adequate protein content of the diet, and increase of diet protein within reasonable limits does not increase protein catabolism nor albumin in the urine. It may increase protein storage in tissues and protein content of plasma with decrease of edema. More than once I have seen the addition of roast beef or beef steak to the daily diet of a patient with nephrotic edema followed by the disappearance of edema and marked general improvement.

Refined methods of estimation of plasma proteins may not be available whenever and wherever desired, but a fair estimation may be made from the specific gravity of the blood plasma (see Peters and Van Slyke, or Trumper and Cantarow). Much of the same estimate of the patient's condition can

be arrived at by the determination of hemoglobin of the blood, the relative volume of red cells and plasma, the skin absorption time of salt solution, with an estimation of the quantity of albumin in the urine.

What has been mentioned somewhat theoretically in regard to impaired metabolism of the cell as a basis of edema is confirmed by the low metabolic rate in many cases of Bright's with marked edema and by the tolerance of such cases for thyroid medication. Furthermore, many such cases are much benefited by desiccated thyroid in large doses. High carbohydrate diets with appropriate doses of insulin may also result in the disappearance of nephrotic edema.

The study of acid-base balance and mineral metabolism has been helpful chiefly in cases of acute nephritis, of marked edema, and in the terminal stages of renal deficit in any type of Bright's Disease. For brevity's sake let me merely mention some of the important observations:

1. In severe acute nephritis, in which renal function is markedly impaired, there is inability to excrete the acid products of tissue metabolism—especially phosphoric and sulphuric acids. That is, ammonia is no longer formed by the kidney and available fixed bases are depleted and acids accumulate. The result is severe intoxication of the organism and usually edema and anuria. Relief is obtained by the administration of adequate amounts of quickly absorbable base, in the form of sodium bicarbonate, per rectum or intravenously if the patient is vomiting or comatose. Glucose is also helpful.
2. Edema fluid acts as a reservoir of alkali—chiefly sodium.
3. Edema is not relieved unless sodium excretion exceeds sodium intake, while total serum base is being maintained. In practice this means that in edema the diet should contain as little sodium as possible while having a neutral ash. The water supply should be ample to afford a vehicle for the excretion of sodium. Its concentration in serum and urine alike is about 3.5 grams per litre.
4. Likewise the chloride balance runs parallel to water balance. The ingestion of ammonium chloride causes retention of chloride when there is renal deficiency and when an adequate supply of base is not available for excretion on account of low serum total base. Then acidosis develops with increase of edema. The ingestion of even potassium chloride in such cases seems to me contraindicated. Potassium citrate or acetate would be better as the older clinicians told us. In cases of nephrosis, on the other hand, ingestion of ammonium chloride may lead to diuresis, because the chloride combines with the excessive amount of sodium in the edema fluid and is excreted if the supply of water is adequate.
5. Excessive perspiration may produce, in a patient with edema, a picture of dehydration with low serum total base and the disappearance of

*Since this paper was written, a case with plasma albumin of 0.98 g. per 100 c.c. was freed of edema.

sodium from the urine. Sweating may, then, do harm and the serum CO_2 should be checked as a means of determining the serum base level. I wonder if this may not explain in part the increased frequency of eclampsia during spells of hot weather.

6. Increase of the calcium of the serum for the purpose of increasing the serum total base, either by administration of calcium or by mobilizing by parathyroid hormone, has been reported favorably as a means of relieving edema. In our hands there has been little success.
7. In the terminal stage of renal deficiency persistent vomiting usually occurs, and the chloride of the body may be greatly reduced—from 535 mgm. per 100 c.c. of plasma to 400 or even 350 mgm. If at the same time the base level (as determined by CO_2 of the serum) is normal or high then acidifying salts (as ammonium chloride) or hydrochloric acid will relieve. If the base level is low as well as the chloride level, then a neutral salt as sodium chloride will supply the deficit, and the vomiting may be controlled.

By these means many cases, without too extensive kidney damage, may be aided to-

ward recovery, and many more may be made fairly comfortable.

In conclusion, what shall we say is essential to an intelligent application of our knowledge of blood chemistry in nephritis? Briefly these:

1. The blood urea clearance test.
2. The phenolsulphonephthalein excretion test.
3. The urine concentration test.
4. The determination of the blood protein and urine protein.
5. The determination of the hemoglobin.
6. The determination of the skin absorption time.
7. The determination of the CO_2 and chloride of the serum.

Greatest of all is needed diligent study of each case under our care as well as study of the results of the work of those who are advancing our knowledge in this field. After groping blindly in years past for means of help in Bright's Disease, what a satisfaction to have some rational guides for procedure.

STATE SOCIETY ACTIVITIES*

GEORGE L. LE FEVRE, M.D.†

President Michigan State Medical Society

MUSKEGON

It is indeed a great pleasure to be with you tonight. You represent the largest unit in the state organization and therefore I consider it a great honor to be able to discuss with you this evening the objectives and matters of interest with which the state society is at present busy.

Probably the most important function of the organization is that concerned with education for, after all, we are primarily in the practice of medicine for the purpose of helping the sick and the improvement in our methods of treatment is of utmost importance. In performing this function, the state society, as you know, has been conducting post graduate conferences throughout the state. We are continually attempting to improve these meetings, keeping in

mind that they are primarily conducted for the benefit of the general practitioner. It is he who is the backbone of the society and therefore deserves the greater consideration. I have no doubt but what such meetings will also be beneficial to those who have limited themselves in the field of medicine. Your society has been particularly coöperative in helping us to arrange these programs and I hasten to assure you that the state organization greatly appreciates this assistance.

Along the lines of medical economics, probably the most important effort of the society in the last few years has been the work of the Committee on the Survey of Medical Services. At the last meeting of the state organization, the preliminary report was presented and is really an excellent work. The committee asked for more

*This paper and the three papers following consist of addresses given by the President, President-Elect, President of the Council and Secretary of the Michigan State Medical Society before the Wayne County Medical Society on the evening of January 15, following the sessions of the annual meeting of the Council of the Society which was held at the Hotel Statler, Detroit, Michigan, on that date. These papers are here presented as giving a splendid account of the present status, actual accomplishments and aims of the society at the present time. It is hoped that each member will peruse these papers in the quietude of his office or home, for they cannot but fail to explain a way for any difficulties which any member may entertain as the relations of the state and county medical societies to himself.

†Dr. Le Fevre is a graduate of Hahnemann Medical College, Chicago, 1891. He did post-graduate work at the New York Post-Graduate School, 1901; New York Homeopathic College (surgery), 1906; University of Edinburgh, 1911. He was granted a Fellowship, American College of Surgeons, 1916, and was appointed to Michigan State Board of Registration in Medicine by Governor Ferris in 1913. He served as president of the Board, 1913-1929. He was a member of the Council of the Michigan State Medical Society, 1921-1932; president-elect, Michigan State Medical Society, 1932 and president, Michigan State Medical Society, 1933. He served as president of the Muskegon County Medical Society in 1927.

money to complete their work but the society felt that they were unable to appropriate funds from the current income sufficient to meet these expenses. However, I am pleased to announce that a very earnest friend of the society has donated sufficient money for the committee to carry on. There has been no change made in our economic structure this year which was not prompted and helped by the results of this Survey and I am sure that we all feel greatly indebted to Dr. Marshall and his committee for this excellent work.

During the last few months, every county society has been approached by its county welfare commission who have asked the profession to agree to some system whereby the indigents of their community might receive more efficient medical care. The officers of your state society had many conferences with the state relief commission and the plan which resulted from these conferences, although not perfect, by any means, is the best that could be arranged in conformance with the rules laid down by the Reconstruction Finance Corporation. I think the best feature of the plan is the fact that these indigents will now receive their medical care from their family physician, thus doing away with the faults and abuses of the old system of wholesale prescribing.

We, as a profession, have always been willing to contribute more than our share

to help the less fortunate members of our communities and when one compares the fee schedule under which we are expected to operate in the indigent relief plan, with the scale of prices paid other merchandising organizations who are selling materials to relief commissions, it is obvious that we are again doing more than our share. However, it is so strange a thing for a doctor to be paid even a small fee for the care of indigents that we all are probably over-elated with the plan. We must always keep in mind, however, that any plan for the medical care of the indigents must remain under our control and must continue only during the emergency.

At the last meeting of the state legislature a plan was passed which makes it possible for afflicted children to be cared for in the local hospitals instead of the University Hospital. The idea of that law is a noble one for a number of reasons, and the children would undoubtedly be better off at home where they can be visited more frequently by their parents. Furthermore, the money raised by taxation for this purpose is spent in the community which raised it and this is certainly a more just arrangement. But apparently there are a number of errors in the writing of the law which we hope will be corrected at some future time. Until this law is rewritten, controversy over its management is bound to occur.

THE UNIVERSITY OF MICHIGAN*

RICHARD R. SMITH, M.D., F.A.C.S.
GRAND RAPIDS, MICHIGAN

The subject assigned to me is "State Institutions." I am sure you will not think it amiss, however, if I confine myself to the University of Michigan Medical School and Hospital. In this connection I think I should say first that I am a Regent of the University, and second, that I have been in private practice in this state for a great many years and am conversant with the problems of private practice, which are my problems. I am opposed to state medicine as commonly defined, as I am to unwarranted interferences with private practice in general. I am thoroughly imbued with the importance of the Medical School at Ann Arbor to the people of the state and to every practitioner. It is, of course, necessary that the Medical School have ample clinical material for teaching. No school of high rank can continue as such without it. Although I have given the matter considerable study I must

say that I do not know whether we have too much or too little clinical material today. The matter is complex and affects the school to its very foundation. We may not pass lightly on the question or advise arbitrarily as to the number required for such a school as ours. The question, however, is

*Read before the Wayne County Medical Society, January 15, 1934.

largely academic. I would recall to your minds that the University of Michigan Hospital is doing an important welfare work here in the state and that we are obliged by law to accept and care for those patients sent to us by the Probate Courts and the Supervisors of the Poor. The number of patients so sent constitutes about three-fourths of all we admit there.

Many of you will recall that I was chairman of a committee appointed by the Michigan State Medical Society to investigate the hospital charities of Michigan a number of years ago. The major portion of our time and effort was directed to the University of Michigan Hospital. We spent two years in doing this and rendered a Preliminary and a Final Report to the House of Delegates which was adopted. In the final report we recommended two things—first, that the so-called “pay patients” that came to the University Hospital should receive a more careful and thorough inquiry into their financial condition, in order that abuses might be avoided. We further recommended that the small group that paid for hospital service and also a professional fee should be eliminated, “if not at once, at least gradually.” Those of us who studied the whole situation realized that these changes could not be made suddenly—that it was a process of evolution and not revolution, and I wondered at the time how much would be done in response to our suggestions. Certain definite changes have occurred. At the time of our report about 55 per cent of all the patients admitted into the hospital came from the Probate Courts or the County Supervisors of the Poor. That number has grown to 73½ per cent according to the records of the last six months of 1933, so that today nearly three-quarters of all patients come from this

group and their admittance is determined by law and is beyond our control. In addition to this there were at the time of our report about 30 per cent of the patients that came within the two “pay” groups, by which is meant that these patients paid for hospital care, but no professional fees. Of these two groups 19 per cent were accepted on investigation and the signing of a so-called “affidavit” and have always been known as the “affidavit group.” Eleven per cent were sent to us by physicians in the state. The two groups together constituted as stated 30 per cent of the patients admitted to the hospital. Today these two groups have been reduced to about 15 per cent—the number admitted through doctors and by affidavit being about equal. At the time of our report nearly 4 per cent paid in addition to the hospital fees a professional fee. Today that number has been reduced to a little over 2%. These changes show beyond question that the University Hospital is making a conscientious and serious effort to coöperate with the profession. The situation in the Medical School and Hospital at Ann Arbor is by no means simple. For example, it involves the part time and full time question which remains today unsolved. Both of these ideas seem to have worked very well at Ann Arbor, and the question is not yet settled, nor does it promise to be for some time. With a smaller appropriation we are having plenty of difficulties—our object is naturally to maintain the school at its highest possible efficiency, but the facts that I have cited to you, and others that I could mention if time permitted, show without the slightest doubt that the hospital is making an earnest endeavor not to interfere unjustly with the practice of those who are dependent upon their private practice for a living.

COUNCIL RESPONSIBILITIES

B. R. CORBUS, M.D.

GRAND RAPIDS, MICHIGAN

Social consciousness and social perspective have found their greatest development among the educated people of America in the last decade. In the vanguard of medical groups accepting the responsibilities which necessarily lead from this social consciousness, has been the Michigan State Medical Society. That self-interest has been a part of the motivating force which has led us into an increased and increasing group of activities does not detract from our accomplishments.

In the ten or a dozen years that I have been on the Council there has been a tremendous increase in these activities. In earlier years doctors gathered together at their monthly meetings to discuss interesting cases, compare notes and swap stories, and once a year got together at a state meeting whose program was built along the same lines. As a unit of organized medicine, either county or state, there was little attempt to guide public opinion and relatively little responsibility felt toward civic or social affairs not immediately of concern to the individual doctor.

The first advanced step that the Michigan State Medical Society took looked toward the education of the public in medical matters, and led to the formation of the present Joint Committee on Public Health Education. The next important step looked toward the improvement of the practice of medicine, and the development of a higher grade of service to the patient, through post-graduate education. Michigan was a pioneer among state societies in bringing the opportunity for the doctor to brush up through sending teachers to his own doorstep.

The attitude of aloofness, so largely responsible for the lay control and much criticized policies of the Charity Medical Clinic, gave way to a number of energetic programs whose objectives would, we hoped, bring something of real value to the social body while, at the same time, the interests of the individual doctor might be more fully conserved. Of these I may mention the Hospital Survey, and our "Survey of Medical Services and Health Agencies." While these, perhaps, are outstanding, there have been other activities whose importance must not be forgotten. The committee on Industrial and Civic Relations did a good job, arduous and long continued, and now gives way to a continuation and an elaboration of its work by the Committee on Preventive Medicine, and the county committees on

Public Relations. A very valuable work was done by the Committee on Cancer. It is no fault of the members of the different legislative committees who have labored so hard, that they have brought forth so little, but that is politics, and I do not for a moment doubt that each committee has, by its active exertions, forestalled many a vicious legislative act which would have been passed except for their efforts.

You have asked me to talk on the responsibilities of the Council, and I have reminded you of some of the activities of your State Society as directed by the House of Delegates during the past ten years that you may more clearly see that as the House of Delegates accepts for the Michigan State Medical Society increased responsibility to society and to its own members, so is placed upon the Council increased responsibility for the carrying out of the program. "The Council shall be the executive body of the Society," says the constitution. Its members elected by the House of Delegates, the Council becomes its board of directors, earnestly desiring and endeavoring to carry out the wishes of the House of Delegates as expressed at our annual meeting. The individual councilor tries to give expression to the views of his immediate constituents, tries to bring into the Council meetings the attitude of his fellows toward such matters of policy as may be brought up. The Council is the watch dog of the treasury, a very important activity, for the constitution expressly provides that the Council shall approve the expenditure of all the funds of the Society. That we have been reasonably successful in this function is shown by the fact that in spite of the depression, in spite of the large amounts of money that we have expended for extra activities, we are still a going concern with a small reserve.

A very difficult problem has been put to the Council from time to time as our State Society activities have grown. The Council, as I said before, feels bound to carry out the desires of the House of Delegates, yet the House of Delegates from time to time has directed certain activities which have caused an expenditure far beyond the expectation of those who introduced the plan or those who voted for it. I have only to mention the loss involved in the publication of the "Medical History of Michigan" and the cost of the Survey. Now do not misunderstand me. I am quite convinced that the cost in both instances was justified, but it is well that I call your attention to certain dangers inherent to any large legislative body which meets for a day or two but once a year. It is so easy for a resolution or a motion to be presented to the House which looks plausible on the face of it but which, in its effect, may introduce a new policy or nullify previous action. It may come out of one man's thought or it may come out of a group representing a geographical division. The individual delegate often can not see the possible result of the passage of such a measure. It seems to me most important that proposed measures which may affect the policies of the Society or suggest activities involving any considerable expenditure of money, should be presented to the Council for their consideration, and to the delegates for their more leisurely study, a reasonable length of time before the annual session. Too often the delegates are asked to vote on a most important question with little opportunity to use their best judgment. Haste, confusion, sometimes even politics, all tend to prevent, at times, the proper consideration of the subject.

As the activities of the Society increased the Council saw fit to form an Executive Committee which meets more frequently than the monthly meeting designated by the by-laws. The House of Delegates never did a wiser thing than to place the speaker of the House upon this committee. The executive committee rarely, if ever, meets alone. The president and president-elect are always present. There is rarely a meeting that we do not invite one or two committee chairmen, the discussion of whose problems is one of the purposes of the meeting.

Formal voting in the Executive Committee is practically unknown. The consensus

of opinion of the majority of those present, whether actual members or not, is usually adopted, and no action involving a matter of large importance or establishing a policy is ever final, except in a true emergency, until a vote of the entire Council is obtained.

Now the Council does not, at any time, direct the activities of committees, whether they be appointed by the president, the House of Delegates or the Council, but we do try to advise with them and endeavor to keep our Society activities as coherent as possible. There are certain established policies which it is necessary that committees observe. We try to avoid confusion which would ensue if one committee should extend its activities into the realm of another.

The responsibility of the Council is a responsibility to the individual doctor as well as to the profession as a whole. To only a few of the total membership is the opportunity given to express their views in the House of Delegates, and many of the members are not articulate. For some reason or another, in many districts, the forum of criticism is the hospital cloak room and not the Medical Society. The individual councilor tries to keep in touch with the viewpoint of his fellows as he meets them, and tries to express, as best he can, their views as well as the views expressed by the more formal resolution passed by the County Medical Society.

This last year a tremendous amount of time has been spent by your Executive Committee in the consideration of the relief problem. I need not go into that further than to say that we have done the best we could. Somehow the impression seems to be prevalent among some that we have only to ask to receive. Of course that is ridiculous. We have fought for every inch that we have got, and we have gotten, if not as much as we had hoped for, yet more than seemed probable at the beginning of our negotiations.

We agree with the new philosophy which conceives of the social order as under obligation to give its members wholesome conditions of life and this must include adequate medical and nursing care. We are doing our part in the effort to find a solution. We know, too, or think we know, that there is a tendency to try out first on the doctor, certain social theories held by some of those now high in administration circles. We

would be prepared to face intelligently such situations as may arise. We want a voice in the forming of the plan. We want a system which will permit the doctor to practice medicine with his heart as well as his head, a plan which will not make the doctor a machine for profit, with the patient passing along the assembly line.

In concluding I want to quote from the foreword of Overstreet's "We move in New Directions," which I have just been reading:

"'There's a hard wind blowing today, which helps if you're going in the right direction,' so a farmer friend writes me. The sentence might well express what is happening in our contemporary life. There is a

hard wind of new ideas blowing. It started out of somewhere a few decades ago, innocently enough. Now it has risen to a veritable tornado of new demands, attitudes and valuations, and blessed be we if we are going in the right direction."

The officers and Council of the Michigan State Medical Society are doing just the best they can to steer the craft of medicine safely through the troublesome waves of depression. It is not an unreasonable optimism which suggests that calmer, happier days are just ahead. Willingly will we adjust our compass to the changing social order if by so doing we can feel reasonably certain that we are going in the right direction.

THE MICHIGAN STATE MEDICAL SOCIETY ITS STRENGTH AND WEAKNESSES*

F. C. WARNSHUIS, M.D., Secretary
GRAND RAPIDS, MICHIGAN

For the twentieth time it was my privilege to present my annual report as Secretary to the Council of your State Society. Another privilege is mine today in being accorded the welcome opportunity of appearing before you, the largest component unit, to review in somewhat restricted detail that which the State Society has accomplished, what it is accomplishing, its strength, its weaknesses, and to give an insight to the stewardship of the Council and Officers.

One hundred and thirteen years ago, in Detroit, the Michigan State Medical Society was founded. Throughout the years it has functioned honorably, sincerely, faithfully and constructively. Its name has remained untarnished. No blot is upon its record; no misdeeds have ever been charged against it; no scandal has ever invaded its ranks. The record is such as we may all refer to with justifiable pride and for which we shall ever be indebted to those to whom the membership intrusted the guidance of the Society's destiny, honored men who through passing years served you unselfishly. I need not mention their names, they come from your city and throughout the state, splendid men who have lived and died that we might live and work inspired by their sound precepts.

The Constitution and corporate articles tersely state the organizational purposes as follows:

"To promote the science and art of Medicine, the protection of public health and the betterment of the Medical Profession, and to unite with similar organizations in other states to form the federecy of the American Medical Association."

These purposes may be enlarged upon by stating that the ends sought are: One compact society with a view to the extension of Medical knowledge and the advancement of Medical Education and to the enactment and enforcement of just medical laws, to the promotion of friendly intercourse among physicians and the fostering of their material interests and to the enlightenment and direction of public opinion in regard to the great problems of medicine so that the profession shall become more capable within itself and more useful to the public in prolonging and adding comfort to life. Such is our purpose and objective.

Organization has become, in medicine, as in almost every other department of human activity the watchword of achievement. It has broken through and broken down all barriers. It knows no Chinese walls. Medicine is a republic in which men have wrought shoulder to shoulder, the Jap Kitasato, the Russian Metchnikoff, the German Virchow, the Frenchman Pasteur, the Dane

*Presented before the Wayne County Medical Society, January 15, 1934.

Finsen, the Italian Lombroso, the Briton Lister, the American Sims.

The plan whereby the County Society is made the unit of organization must commend itself as both wise and just. The great underlying principle of all medical organization is to reach the individual doctor. To cause him to realize that he has other responsibilities than those pertaining to his immediate clientele, to broaden his vision, to awaken him to the fact that association with his fellows will enable him to mold public opinion and wield influence in the affairs of men. Our Medical Societies are the great post-graduate schools of the profession where knowledge is increased and individual character developed. To possess vitality the doctor must be organically united with the general body of the profession. The local County Society is the unit of medical organization.

The fullest possibilities of medical organization will not be realized until the term organization stands for the same term as organism. The former bears the significance principally of collaboration and co-operation; the latter signifies all that, and further division of labor, specialization, systematization; the former indicates harmony and reciprocity of action; the latter, concentration and singleness of aim; the former suggests confederation; the latter, union and strength.

Woe worth the day when medical organization takes on the guise and form of a trust in the bad sense of the word. Outside of all question of principle, as mere policy, short sighted and fatuous would it be to afford any ground to the public for suspicion that in combating effort we are actuated chiefly by mercenary considerations.

Let well thinking people once become convinced that we are a selfish, grasping set and the organization's worthiest claims will be defeated. True, the pleading voice of the sore plagued Lazarus comes to our ears ten times more frequently than the call of Dives; and the further pity it is, Sir Dives does not wish to pay more for his pill than the merciful price made to Lazarus. But all that goes with life.

Our science is a jealous mistress and will not countenance the giving of time and thought to object worship at the altar of Mammon. The size of our golden calf shall not be made the appraisal of our scientific

attainments. The tongue that wags most frequently and incessantly about income is likely to be as dumb as Yorick's skull when high debate is on. The doctor who pores over his ledger will pore least over his medical journals. Take care of your science and your science will take care of you.

The promulgation, by medical men, of the knowledge so requisite to the welfare of mankind individually and as a whole, cannot be most thoroughly and effectively accomplished by separate effort. It is in this direction that organic coöperation finds its highest function. Not merely or chiefly for purposes of professional aggrandizement should organization be promoted—were that the only end proposed or discernible, well might we in silent procession take our departure from the proud temple of medicine, pausing to inscribe over its portals, "There is no hope. There is no glory." But not so! Our spirit, our purpose and all our traditions repudiate everything that is so paramountly narrow and selfish.

The common answer received from the uninformed, inconsiderate doctor when asked why he is not a member is: "I can't see whereby membership would benefit me." He cannot see because he has failed to analyze his position and relationship in the medical world. I propose to point out some of the outstanding benefits of affiliation with the County Medical Society.

BENEFITS OF MEDICAL SOCIETY MEMBERSHIP

The Medico-Legal Committee handles and defends through last courts if necessary malpractice suits against members. The Michigan State Medical Society is, however, not an insurance company and therefore not in a position to pay judgments in the event of an adverse verdict. One year's service of protection is equivalent to a lifetime of dues paid to the County and State Medical Society.

Among the benefits derived from membership are: (1) THE JOURNAL OF THE MICHIGAN STATE MEDICAL SOCIETY is your house organ. In addition to scientific articles, the Journal reports all the activities of Officers, Committees, Council, Annual Meeting, County units and informs the members as to what is being done for each. Read it faithfully. (2) The Joint Committee sends speakers to lay organizations and to High Schools who enlighten the public

upon the findings of scientific medicine. (3) The Radio Committee provides educational talks weekly over six states' broadcasting stations. In these talks unscientific propaganda is shown up. (4) A Committee on Economics has conducted a state survey and is now studying vital questions. It has accomplished just recognition to the profession and has succeeded in a measure in eliminating imposition. It has aroused nationwide attention and is bringing about revampment of lay programs to the better interests of health and the physicians relationship. (5) Post-Graduate opportunities are provided yearly in Detroit and Ann Arbor in the way of special intensive courses, clinics and Councilor District Conferences. (6) Regarding Preventive Medicine through the state and counties the Wayne plan is being promoted so as to return to the doctors' offices preventive health measures, thus causing abandonment of free public health clinics. (7) By committee activity and study this problem of maternal welfare is being dealt with and preventive measures are being brought under medical supervision and direction where it belongs. (8) State influences are contributed to the American Medical Association whereby the American Medical Association is enabled to obtain an equitable policy in Veterans' care and in all other congressional medical and health legislation. (9) State Legislation representation for imparting facts related to medical legislation. Many conferences. Defeat of untoward legislation. Education of legislators and legislative contacts through all honorable channels. (10) Foundations advisory representatives maintaining contact with foundations and funds. Consultations and recommendations as to medical policies. (11) Three ex-officio members are on this crippled children's commission advising and recommending medical policies. (12) Monthly confidential bulletins are mailed to County Society Officers informing them upon various movements and proposals related to health and medical practice and suggesting local society activity to enhance medical interests. (13) There are committees on Cancer, Useful Drugs, Industrial Relations, Auxiliary and Special Committees all active in promoting professional interests and sustaining professional rights as well as defeating impositions. (14) The

Executive Committee meets monthly where it directs organizational policies and supervises activities. It initiates representation, controls administration work and acts when speed is imperative. (15) The Council meets twice a year. It supplements the actions of the House of Delegates and controls expenditures. It promotes county society activity and advances organizational purposes and policies. Eighteen members from designated districts giving statewide representation. (16) The Scientific Committee is composed of Section Officers. It determines features of scientific program for annual meeting and provides recognized national speakers for annual meeting for members' Education Enlightenment. (17) A. M. A. Delegates are five state society representatives in A. M. A. The House of Delegates creates policies and activities that are of direct benefit to every individual doctor in every community. (18) The Annual Meeting consists of a scientific program and exhibits. House of Delegates composed of delegates from county societies who are your personal representatives who direct and control your State Society and who speak for you in this centralized forum and direct your officers. (19) Minimum Program for County Societies. (a) Ten meetings a year. (b) Physical examination of members. (c) Three dinner meetings. (d) Picnic or golf outing. (e) One meeting with dentists and attorneys. (f) A scientific team for program for another county. (g) Sponsorship of five lay meetings. (20) Information Bureau is also a function of the Secretary's office. Information is supplied to members and to the public. An average of 75 inquiries answered each month, 1,000 a year. Numerous inquiries are also answered each week by the Editor from his office. (21) The Annual Conference of County Secretaries is held each year with the Council. This enables local secretaries to become informed as to policies and activities, and favors increased county activities.

My regret is that it is impossible to present to you the specific features and appraisal of their value to a member of each one of these activities. May I not encourage each of you to determine these facts for yourselves by devoting time to the study of the achievements of the Wayne County Society and the State Society?

WEAKNESSES

These I shall tersely summarize as:

1. *Remaining Uninformed*: It is quite disheartening to witness the number of members who are uninformed—some wholly so—as to the activities and achievements of their County and State Society. There is no excuse for it. The uninformed has failed to attend his local and state meetings, he has withheld participation, he has declined committee service, he does not read his Bulletin, the State Journal, and he ignores the reports of committees, the House of Delegates and of your officers and Council. There are too many heads buried in the sands. The doctor who states he receives no returns for his dues, that he receives no benefit is a doctor uninformed or else incapable of deduction. Your county officers can, if he will but make an effort to consult them and read their reports and those of local and state committees, speedily disabuse his mind and demonstrate the groundlessness of his assertion.

2. *Withholding Coöperation*. An hour might well be spent in a discussion of this weakness. The let "George Do It" spirit has been the greatest obstacle in organizational progress. It has defeated many a movement and representation advanced in your personal behalf.

3. *Hyper-criticism*: During twenty years I cannot recall an officer or committee member who failed to make a serious, honest, faithful endeavor to fulfill the duties of his office. They have, without exception, contributed of self, time and often money in their efforts to advance organizational objectives. They sought not for self but for the good of all. And in spite of all that they did and gave, many have been subjected to unjust criticism, they have been heckled and been accused of selfish motives by individual members or by a small group wholly uninformed and in no position to pass judgment. Errors have been made, yes we all make them, but errors were never of intent or purpose and never inspired. Constructive criticism is helpful and to be encouraged. Harping criticism founded on baseless facts cannot be condemned sufficiently. The "knocker" has no rights for knocking alone.

DUES

I am at this point impelled to make a brief statement regarding county and state

dues. Comparative figures can be presented as to the benefits derived from dues paid to your medical society and those which you pay to your club, lodge, church, or similar lay associations. When these figures are audited I will guarantee to demonstrate that for benefits received your medical society dues are the smallest in amount.

You pay 2.7 cents per day for your state dues and 4.1 cents per day for your county dues—a total of 6.8 cents per day! Or if you attended your county meeting as you do your church, lodge or golf club every week and the collection plate were passed you drop in 47.6 cents—with the other "set-ups" free.

These three—uninformed, lack of coöperation and unwarranted criticisms—constitute the three forces that are destructive to organizational progress and achievement.

For a score of years, those who have intimately associated themselves with executive and administrative details have disseminated facts concerned with the trend of medical practice. Through these years much has been spoken and written on these subjects. A large group of doctors—far too large—feeling secure and content in the prosperous days of practice rarely paused for reflection and equally indifferent gave little or no heed to their professional future or to the untoward forces that were steadily encroaching upon the field of medicine.

Then, over night, "State Medicine" became a mouthword, created some alarm and aroused a few. Came prosperous inflated days with its wave of unconcern, selfish quest and then the "crash." The public and profession found themselves confronted with the need of readjustments and "Economics" became the new mouthword.

With it were born Committees, Investigations, Analysts, Proponents and Advisors. Policies and programs were advanced, some good, others wholly fatuous and worthless. A stunned, groping people were casting about for ways of readjustment. The call was for leadership but support was wanting. So, for three or four years we swayed to and fro from this and that position. Finally, it gradually dawned on increasing numbers that unity and concentration of effort were imperative in order to bring about stabilization that would usher in an era of returning stability. That conviction, as yet, has not been implanted in the minds of a

sufficiently large enough majority of people—hence, the slow progress of the day.

The pressing need is to recognize that governments exist to be supported by the people and not to support the people. Our perniciously acquired habit of endeavoring to “thumb” all we can from government is fundamentally unsound. The same principle applies to organized effort. The basic principle is “to give” not “get.”

We have all been on a debauch into the morass of luxury and spending. We sought and demanded all things but were totally unable to produce so as to pay and consequently we resorted to the “Gimmes.” Nothing but bankruptcy could result when the agency went bankrupt from which we asked when we ceased to contribute. So we came to the crossroad. Where shall we go and under what conditions?

SURVEY

Every sustained program must be founded upon facts and existing conditions. Without that knowledge ultimate failure will ensue. During the past few years we have had a deluge of alleged facts. The vast majority of them were concerned with generalities and not adaptable to local or regional application. In many details there was palpable unreliability. In vain did we seek essential details that would serve as a guide to the solution of our Michigan problem. When it became apparent that Michigan and Michigan's profession must solve its own problems, steps were taken to secure basic information of actual conditions. Our Committee on Survey of State Medical Services and Health Agencies was created. Its work began in 1931 and its first report was released June 1, 1933, after an expenditure of some \$14,000. This report disclosed the fundamental facts and data so necessary for the formation of constructive and applied policies that will eventually solve the problem of adequate medical care and professional independence.

The report clearly demonstrates:

1. Incomes for a certain percentage of people are inadequate to defray the expense of illness.
2. That providing medical care is a joint community responsibility.
3. The demand that doctors provide free medical services places an unjust burden upon doctors. A burden that must

be assumed as a joint community responsibility.

4. That preventive medicine should be practiced by the profession and not by health agencies.
5. That subvention may be the only solution for the providing of medical care in certain localities. The report further discloses data related to other factors involved in medical practice.

Income of physicians, distribution of physicians, cancer, tuberculosis, clinic and hospitals, and similar related problems are presented as they involve the avenues of health and practice, and sound conclusions are based on actual findings.

The proficiency of the medical profession, maintenance of proficiency and types of services are discussed in the survey investigation.

The survey report imparts a true picture of existing conditions and from that basis and upon those facts a foundation is laid upon which the future medical practice and policies should be built so as to endure as well as to be adequate.

Having briefly enumerated the essentials, and possessed as we are now with a dependable inventory, we can direct our thoughts and energies towards applying economic principles.

APPLIED ECONOMICS

There are several general principles requiring observation ere achieving principles of application can be promoted to successful conclusion.

Foremost is the development of a co-operative sustaining attitude of contribution of service on the part of our members. They must be educated to realize that the first great requisite is the subscribing of self and personal service to the activities of the County and State Society. Dividends will accrue in direct ratio to the contribution that members make. Service on committees, service in observing principles and policies, service in establishing the requisite public support. As you give so will you benefit. A universal abandonment of the attitude of “what do I get” for one of “what can I give in order that I may get,” this must be the first readjustment and enlistment.

Following that comes loyalty to your County Society by exhibiting an intense sustained interest in its meetings and bending

every effort to institute and develop a county program for the advancement of the recommendations made by the Survey Committee as related to practice, indigent care, preventive medicine and public health. Universal support, without exceptions, must come from every member and every doctor should be a member.

The third essential is individual proficiency and ability. Abreastness to modern principles and methods of practice, maintained by means of planned study and clinical work during a portion of each year, must be made a standard that is to be met by every doctor.

An occasional attendance at your county meeting, a brief visit to some hospital or clinic, a few days at some questionable national meeting, cursory medical reading—these do not constitute sustained post-graduate study. Realizing this to be true, your State Society in close coöperation with the department of Post-Graduate Medicine of our University, has provided study opportunities, unexcelled elsewhere, at your very doors. A well thought out program for study opportunity and clinical experience is existent and is being enlarged. The excuse of time and expense can no longer be advanced for failing to pursue post-graduate study.

These opportunities should be eagerly embraced by every doctor. The deplorable fact is apparent that the doctor who has the greatest need for renewed instructions is the one who fails to pursue study opportunities and it is he who complains most bitterly that he can scarcely exist on his practice. Little does he realize that his lack of proficiency, his ignorance of modern methods and their application, has caused his former patients to consult his confrère who has remained abreast of medical progress. It is this class of physicians who cause the public to criticize the profession as a whole. That man must be caused to extend himself.

And this brings me to the discussion of whether or not the time is at hand when we should broaden the requirements to be met to secure and maintain society membership. Should the present qualification requirements of graduation and license be increased so as to include a certain amount of post-graduate work each year?

A world upheaval is manifesting itself.

As a profession we have been drawn, in company with all other groups, in a maelstrom of social and commercial confusion. It is little to be wondered that there has been much discussion of various forms of controlled medicine that seeks to bring about a new relationship between physician and patient. It is a fermenting process, effervescent in nature, that may momentarily arrest progress, divert our purpose and cause apprehension.

My greatest concern lies in the physician of today and his followers of tomorrow. Concern as to how they are going to measure up to the new state of affairs that is to be, how they are going to acquit themselves of their new responsibilities and concerning the ideals they will erect to govern and inspire them. More exacting qualifications for the physician are apparently requisite to conserve our present position, acquire renewed public confidence and establish a leadership in our state in all matters pertaining to the health and physical welfare of the people. Therein lies our future economic stability, the future of medical science, practice, hopes and aims. While wearing the mantle of science we cannot worship in the temple of gold. The caduceus cannot be cast aside and in its stead we permit the money pots of Midas to become the emblem of the profession.

When we, as a profession, continuously maintain a standard of proficiency and render proficient service our continued independence will be insured and our economic problems will be solved in great part. For the individual physician that is the first principle in applied medical economics. It is the first objective of our County Society.

With the acceptance of the principles of loyalty through membership, and individual proficiency and their continuous observance we shall stand before the public in a commanding position that will enable us to institute procedures that will bring about satisfactory adjustment and a solution of those other fundamentals that are set forth in the Survey Report.

There are some who will say these are ideals but unattainable. Those individuals are the ones who shackle our power and obstruct our progress. The more prompt that we are in increasing membership qualifications and the sooner we cause the public to perceive that membership affiliation is a de-

pendable guide in determining individual proficiency when selecting a family or personal physician, then and not till then will we free our ranks of the disgruntled—non-proficient doctor, for bereft of county membership that individual will lose community confidence and a waning practice will be his.

Economics is the science that deals with the material means of satisfying human desires. The health desires of the public will be satisfied when we of the profession reflect the material means of coöperative loyalty and individual proficiency. That then will be medical economics applied.

As we look to the future we must be continuously mindful that we must deal collectively with the exploitation of medicine. The safety of the public in matters of life and health rests upon the initiative of our profession. The preservation of all that is best in the traditions of our profession, of all that has been produced in the development of the science of medicine, can be accomplished only in a closed union of our individual interest. The lone straggler, the self-sufficient, are without power.

"It must not be forgotten that medical or-

ganization has been and will continue to be the most powerful influence in the protection and maintenance of the personal interests of the individual physician. The fact should not be lost sight of that medical organization has consistently demanded that the economic security of the individual practitioner be insured along with the welfare of the public at large in any new form of medical practice which may be evolved."

Through the maintenance of strong medical organization, the medical profession will have reasonable assurance that its economic security will be protected and safeguarded. Much depends on how the profession will act. Only by united action can we hope to weather the storm and preserve those proven principles which we know to be best for the public and the physician.

It is toward those ends, Mr. President, that your State Society is directing its thought, energy and action. Who is there that will assert that he has no personal interest, no need for participation or coöperation and prefers to hold himself aloof from those who constitute the county and state Society?

CARDIOVASCULAR SYPHILIS*

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The invasion of the cardiovascular system by the micro-organisms of syphilis may be considered a later development of the disease, the end-result of the infection. Although the association of aortic aneurysm with syphilis has long been known to medicine (the relationship is believed to have been recognized by the famous anatomists of ancient Padua), it was not until the dawn of the present century, when the organism of the disease, the *treponema pallidum*, was definitely identified, that the true nature of the disease process and our knowledge of same, as applying to the cardiovascular system, were on anything like a sound foundation. Even at this late date, the effects of the infection are only gradually being appreciated at their true value.

The sex incidence leans overwhelmingly to males. Some authorities put the proportion as men outnumbering women, four to one, while others allege a ratio as high as

six to one. It is considered that laborious occupations predispose to the disease.

Before proceeding to discuss cardiovascular syphilis and its treatment, it might be well briefly to review syphilis as a disease entity, and its progression to final denouement—involvement of the circulation. The species name, *treponema pallidum*, was first given to the infecting micro-organism by Schaudinn, one of its discoverers, since when the term, *spirocheta pallidum*, has been read into the international

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language of syphilology by the adherence of Hoffman (another of the discoverers), and Metchnikoff, and by the sanction of usage.

The infection takes place through the entry of the spirochetes at any point on the body which comes in contact with the living organism, or they may be transmitted in utero from an infected mother. A local lesion is usually the first sign of infection, but before this has developed to the point where it can be identified, and the appropriate label of disease affixed, the spirochetes will have spread to and multiplied rapidly in other parts of the body, invariably producing other lesions, particularly in the skin and on the mucous membranes.

Following this general infiltration, the lesions tend to heal and the spirochetes to diminish in numbers. They may even be entirely destroyed or die off at this period, although in the great majority of cases, some of them, at least, remain alive in some part of the body, alive but quiescent, and causing no symptoms over a term of years. There then comes another active period, when these micro-organisms again multiply and spread throughout the body, with possibilities of causing any one or more of the following: brain lesions; atrophy of the optic or auditory nerves; destruction of bone and cartilage. It is at this juncture that syphilitic infection usually becomes apparent in the heart and circulation, although invasion by the spirochetes may have taken place before or during the so-called secondary stage. The acute lesions are usually distinctive, but the chronic disease can only be recognized by other syphilitic stigmata.

The spirochete pallida of syphilis can produce such a variety of lesions in the cardiovascular system that a generalization of the possible clinical picture is somewhat difficult. Necropsy findings provide the best and most illustrative method of study. Syphilis may attack the aorta, the cardiac valves, the coronary arteries, the auriculo-ventricular junctional tissues, and the pericardium. It may induce chronic interstitial myocarditis by causing chronic arteritis of the coronary arteries, or by means of gummatous deposits. In popular opinion no other organ is so frequently injured by the micro-organisms of the disease as the aorta. Louis Potheau of Paris emphatically declares that in every case of aortitis, syphilis should be expected, and just as one should

think of syphilis in a case of aortitis, so one should think of aortitis in every syphilitic subject. The late Dr. Warthin, who has made a major contribution to the pathology of the disease, and at the same time injected an atmosphere of acrimonious discussion, believes that the heart of every syphilitic is involved in the infection. He has consistently found the germs in the heart muscle, having in 1907 and again in 1909 made his original reports on syphilis of the heart with demonstration of the spirochetes in a variety of myocardial lesions. In 1895, long before the parasite was known, Virchow detected syphilis of the myocardium and diagnosed it as a syphilitic interstitial myocarditis pathologically, which fact should not be lost sight of by those who now doubt Warthin's pronouncements.

Harlow Brooks takes up the cudgels on behalf of the myocardial theory so ably advanced by Virchow and Warthin. In an address in 1925 before the Inter-State Post Graduate Assembly of North America, he said: "Text-books but a few years old still state that syphilis of the heart muscle is rare and they largely consider the subject as unimportant. Too much weight relatively has been put on the occurrence of syphilis of the aorta, and still the idea persists in the minds of many that syphilis of the heart refers to a specific aortitis. It is quite certain that nearly all cases of syphilis of the aorta which come to section show definite and unmistakable syphilitic lesions of the heart muscle or endocardium also, and when one undertakes an analysis of the symptoms manifested in the greater number of cases, it will be found that the muscle and valve lesions are by far the more productive of symptoms and signs."

Be the arguments for or against the prevalence of syphilitic lesions in the muscle what they may, it must, however, be accepted as axiomatic that every case of early syphilis has the potentiality of becoming a case of cardiovascular disease. The infection may involve the cardiac area before or during the secondary stage, but statistics from world-wide sources indicate that from 16 to 20 years ordinarily elapse between the primary lesion and the appearance of definite symptoms of circulatory infection or impairment. It is a matter of record that the majority of cases of acquired syphilitic heart disease first come to the attention of

physicians when the patients are in their prime—around the 35th to the 40th years—when they are, or should be, in the process of attaining permanent business or professional success, although definite physical signs have been encountered within the first six months. Reid records a case with enough signs for positive diagnosis three months after infection.

Can then the date of the acquisition of the primary lesion in the average case be traced back to a period between the 20th and the 25th year? In the aggregate, I think it can, even without definite information from the patient, who, in many cases, has either forgotten the obscure beginnings of the infection, or out of a mistaken sense of delicacy withholds the facts. Brooks declares that the average case of syphilis of the heart which has come to his service has become clinically apparent at a period of about twenty years after the initial chancre. In most instances his patients have previously received some treatment, sufficient perhaps to relieve the disfigurements consequent to the disease, such as ulcerations, tertiary skin rashes, alopecia, and the like. In such instances, as a rule, the cardiac involvement once inaugurated proceeded on with very little stop or hindrance until vigorous specific treatment was enforced. In a very considerable percentage of Dr. Brooks' cases as they had come to him, the idea that the existing cardiac condition might have been due to a basic syphilis had been ignored by many physicians.

J. H. Stokes thinks that little cardiovascular disease can be, or is, recognized in the first ten years after the primary exposure to and acquisition of syphilis. He believes that 45 per cent of the cases presented for diagnosis or treatment can be definitely recognized during the second decade, while 3 per cent is recognized in the third decade. There remain, then, a great number of obvious heart cases of undetermined origin, many of which will undoubtedly receive the proper label of disease later on when faulty diagnosis has been corrected or symptoms become more pronounced. According to Sir Clifford Albutt, congenital cases are not infrequent from the fifteenth to twenty-fifth year, while they are common in syphilitic infants.

Syphilitic infection of the aorta may occur with or without involvement of the

aortic valves or coronary arteries. It frequently happens without the development of an aneurysm. It is in the vasa vasorum, the small nutrient arteries and veins of the outer coat or adventitia of the aorta, then in the media of the ascending portion of the arch that the primary infective process usually begins, which process is usually rapidly progressive after the appearance of definite signs. Next in frequency the transverse and descending portions are involved, then in turn the semi-lunar valves may be attacked, with resultant aortic insufficiency. When the wall of the aorta gives way, you have, in fact, an aneurysm. All these manifestations, with coronary artery disease, are complications of simple syphilitic aortitis, the whole eventually being accompanied by syphilitic myocarditis.

Inflammatory disease of the aorta, especially of the arch, with a thickening and stretching of the walls, and a tendency to extend to the aortic valve, has had clinical recognition for more than a century. It is but a scant sixty years since syphilis has been associated with such conditions, and that only since the English physician, Francis H. Welch, published his notable work in 1875. The demonstration of spirochetes in aortic lesions during the current century has thrown fresh and conclusive light on the frequency of syphilis as a cause.

In the consideration of diagnosis, the following points, among others, must be taken account of: age, previous history, history of present illness, subjective symptoms, the results of physical and instrumental examination, the Wassermann reaction, the presence or otherwise of syphilitic stigmata, and the course of the disease. The most prominent symptom is pain, which may range from a tightening or burning sensation about the upper sternum to the exquisite agony of angina pectoris. Such pains may be intermittent and the result of exertion, or they may be continuous, with radiation to the neck, shoulder, and down the arm and ulnar part of the forearm and hand. There may also be shortness of breath, rapid heart action, cough and weakness. Frequently there is dyspnea, sometimes abnormal pulsations in the suprasternal notch, pulsations in the right subclavian artery above the clavicle, with dullness in the first and second interspaces to the right of the sternum. Addi-

tional physical signs may consist of an accentuated second sound with a systolic murmur at the aortic area.

The objective signs are often hard to determine and unless the symptoms are sufficiently marked to command attention, they are liable to be overlooked. It would be good practice, I think, in all doubtful cases of heart disease coming for diagnosis, first to rule out a history or signs of rheumatic fever, then to inquire into the history of possible luetic infection.

Aortic insufficiency is a frequent complication of syphilitic aortitis, probably the most usual accompaniment of the disease. As has been said before, it results from the extension of the infection to the semilunar valves. When established, left ventricular hypertrophy soon becomes evident, whereas it is seldom that heart enlargement occurs in simple syphilitic aortitis. The physical signs of aortic insufficiency are a soft diastolic murmur, more often heard along the left border of the sternum than in the second right interspace, a systolic murmur at the aortic area, and sometimes the classic Flint murmur at the apex. Throbbing of the carotids is invariably manifest, and in more advanced cases, pulsations in the suprasternal notch can be seen and felt. Also, there is usually a pistol-shot sound in all the larger peripheral vessels. The characteristic aortic facies may also be noted—sunken cheeks, pale and bluish sclerae, and a pale and sallow complexion. On occasions there is a Corrigan pulse.

Aortic stenosis, as exemplified by a narrowing of the ring or orifice, hardly ever develops as a sequence of luetic infection, while syphilitic changes of the mitral and tricuspid valves are apparently unknown.

An aneurysm is a dilated artery. If a liberal interpretation of medical history be permitted, it seems that the renowned Galen described a traumatic aneurysm, but be that fact as it may, my discourse is on another type of aneurysm—syphilitic aneurysm of the aorta. Speaking broadly, an aneurysm is a sac due to the dilatation of the wall of an artery and which is filled with blood, a pulsating tumor, as it were. Osler described it as a blood-containing tumor whose walls are formed by the walls of a blood vessel, and whose cavity is in direct connection with the blood vessel from which it arises.

The development of aneurysm of the aorta from syphilitic infection can be traced from a review of the pathology of the lesions in the aorta itself. In the wall, and particularly in the ascending and transverse arch, the spirochetes cause microscopic perivascular round-cell infiltration usually commencing, as before mentioned, either in the adventitia or media above the aortic cusps. In the gross, the lesions consist of aggregations of yellow, round and oblong depressions, with definite margins, which are at times elevated. Frequently there are coincident atheromatous patches. These lesions tend to spread, affecting the external and middle coats and the intima. The fibres become broken and separate; there is a lessened resistance of the vessel walls, a loss of elasticity, and end-result of fibroid degeneration. By such mechanism an aortic dilatation ensues, and when the resistance of the aortic wall gives way entirely over a circumscribed area, the sac or aneurysm develops. It may occur in any part of the aorta and be of any size, sometimes filling one side of the chest, or half the abdomen. In some cases there is more than one aneurysm. Sometimes there can be seen that huge pulsating bulging of the chest, involving the adjacent structures by pressure, and the skin thin and discolored, as if the mass would burst outwardly. Again, the size may be as small as a marble, and to outward appearance non-existent.

The symptoms are likely to vary according to the site and size of the aneurysm. In some cases, and particularly in those where the aneurysm is small and situated at or immediately above the aortic sinuses, symptoms and signs are often absent. The vast majority of cases, however, present definite symptomatology. Pain is usually the most frequent and earliest evidence, and most commonly it is of a constant, gnawing character. It may also simulate anginal pain, while hyperalgesia can often be elicited over the area in which the pain is seated. The aneurysmal pulsation in the thorax and sometimes in the suprasternal notch, or in the side of the neck, is generally an outstanding symptom. No outstanding facies is usually seen, unless the aneurysm is associated with anemia or aortic incompetence of a severe degree, when pallor becomes pronounced.

The apex impulse is seldom displaced, un-

less the heart is enlarged from some co-existent valvular disease, although it may be felt at an abnormal site when the aneurysm is big enough to displace the heart itself. Above the level of the third rib the heaving impulse, systolic in time, so characteristic of aneurysm, is usually felt, while if it be substernal, the pulsation is often very pronounced, even more forcible than that of the heart. The area of dullness of an aneurysm of the aorta is seldom a true indication of the size of the aneurysm, as most often only a portion of it is in contact with or near the chest wall. Radioscopy or autopsy invariably disclose it to be much larger than would have been suspected from the area of dullness on percussion.

The second sound is usually heard well, being most often of a loudly accentuated and ringing character. A systolic murmur is not common, and a diastolic murmur even less so. Dyspnea, sometimes paroxysmal, is a feature of very large aneurysms, while cough is a later symptom than the pain. A tracheal tug may be observed when the aneurysm becomes adherent to the trachea, or to the left bronchus. The course varies greatly: the aneurysm usually enlarges slowly and the patient may suffer for many years before death ensues. Although the fatal termination can come from the final rupture with hemorrhage into the pericardial sac, the chest wall, trachea, esophagus, etc., it is due in the majority of cases to cardiac failure. Rupture on the surface of the chest wall is a very rare occurrence. The diagnosis is tremendously facilitated by radiographic examination. In many cases it is absolutely essential, especially when there is no pulsation of the thoracic wall.

Until very recently little attention was paid to disease of the coronary arteries, as beyond providing autopsy findings, they excited comparatively little clinical interest. Now, however, in the light of that newer conception of cardiology, the situation is changed. Being branches of the aorta, the blood they carry returns to the heart by way of the coronary veins and sinuses, and such being so, such local diseases as sclerosis (coronary endarteritis), thrombosis and embolism, menace comfort in living, and even life itself.

The literature lacks unanimity on the importance of syphilis as an etiologic factor, under ordinary circumstances, in coronary

occlusion or thrombosis. A few writers attribute to the disease a significant role, while others deny it a prominent place as a source of infection. Reisman thinks that it has its greatest importance as a factor in cases of the affection occurring in early life, *i.e.*, under the age of 35, while Stokes says that a severe or extensive aortic lesion is seldom found without concurrent coronary damage, even though the coronary signs be absent.

Sclerosis of the larger branches of the coronary arteries from syphilitic infection may be a rare occurrence, yet it is not unknown, nor is infiltration around the smaller arteries and closure of the coronary orifices in the sinuses of Valsalva, due to shrinkage and contracture of the surrounding tissues. The signs and symptoms of coronary disease are: an increasing frequency of precordial pain, tending to radiate to the left arm and neck, and dyspnea with or without the usual signs of cardiac involvement. The characteristic electrocardiographic signs are: an abnormal QRS complex in all leads: T wave negative in Lead I, in Leads I and II, or in Leads I, II, and III, never in Lead III alone.

The symptoms of coronary artery disease are usually difficult to differentiate from the symptoms of angina pectoris—and the symptoms of the latter are often noticeable when the coronary arteries are perfectly healthy. Torrey believes that aortic aneurysm has much to do with coronary disease, especially when the first part of the aorta is the one affected, the proper delivery of blood by the coronary system being then seriously impeded, and myocardial degeneration and cardiac breakdown hastened.

As to the lesions in the myocardium, Brooks again holds that process appears to originate mostly in and about the coronary trunks, spreading from these into the muscle. In earlier days the gumma was practically the only lesion that pathologists would admit to be syphilitic. Following on Virchow's discovery, which has later been confirmed by Warthin, pathologists veered to the argument that around gummas of the heart, in the neighborhood of the gummatous lesion, there are to be found, trailing off into the myocardium, infiltrations of lymphocytes, of mononuclear cells, which the famous German pathologist described as follows: "These are syphilitic infiltrations, this is an interstitial syphilitic myocarditis;

there is no reason why it should not exist without the gumma, and therefore pure interstitial forms of myocarditis due to syphilis can and do exist."

Gummata of the heart appear with considerable frequency, but on their disappearance with treatment a permanent scar remains on the muscle, and a fixed scar of any degenerative process always remains a permanent disability.

It is a generally accepted clinical fact that syphilitic lesions of the conduction system are extremely rare, although a few cases where the bundle of His has been infected, have been reported. The same assertion may be made regarding the endocardium and the pericardium. Auriculo-ventricular heart block is possible from lesions affecting the auriculo-ventricular junctional tissues, while in the pericardium the attack is likely to take the form of an infiltration, with consequent formation of fibrous tissue, resulting in adhesions between the two layers of the pericardium. In some cases there may be effusion of fluid into the pericardial sac, but gummata are of rare occurrence.

In all doubtful cases a Wassermann test should be made, and this especially applies to all cases of aortic disease, even though there is a history of rheumatism. A single negative Wassermann does not necessarily rule out syphilis. In many instances it may be advisable to employ a provocative dose of iodides, salvarsan, or other arsenical. Frequently necropsies justify the attitude of diagnosing as syphilis conditions where other signs point to it even though the Wassermann or other reaction was negative. No matter what the result of the Wassermann is, it should be considered in conjunction with all other available clinical data. In the early stages, the Wassermann is almost invariably positive, but as the disease becomes more chronic it is increasingly negative. Such conditions of the central nervous system as cerebrospinal syphilis, often accompany cardiovascular syphilis, and should always be looked for in the general examination.

The x-ray and electrocardiograph are also of great assistance in the diagnosis of cardiovascular syphilis. Many abnormalities in structure would otherwise have to await the findings of the dead-house but for the former, while the latter has come to be regarded as an indispensable agent in the

recording and confirming abnormalities of cardiac action.

Prognosis of cardiovascular syphilis cannot be said to be good after the onset of definite symptoms. It must be remembered that here there are two grave conditions—the syphilitic infection, which is naturally virulent with rapid tissue-destroying proclivities, and on the other hand there is the vital cardiac mechanism, which can do no other than fail in functionability in proportion to the rapidity with which the infection impairs its members. There is in addition the possibility of sudden death from aneurysmal hemorrhage and angina pectoris, and the tendency to rapid myocardial degeneration.

There is no definite set of statistics to go by in determining how long the average life may be prolonged after the disease is identified. Much depends on the degree of damage at the time the diagnosis is established and treatment instituted. I am willing to believe that the normal span of existence for sufferers from this dread disease can be considerably lengthened in view of the advent of such lately discovered anti-syphilitic therapies as salvarsan, and the newer conception and practice of cardiology. In all events prognosis is now better than it was, say, 10 or 20 years ago.

The time factor is the key to the situation, and prognosis will be in proportion to the lead which can be secured on the progress of the disease by appropriate treatment. It must be understood, however, that complete eradication of the disease, even under the most favorable circumstances, has yet to be achieved by any remedy, and this fact must be considered in prognosis. Now to be more specific: Anderton estimates that patients seldom live more than five years after the disease is discovered, although they may live eight or nine years. Reid reports on a series of cases where the average length of life in cases of a comparatively advanced type from the time treatment was instituted was one year in certain circumstances, and three years under different conditions. Taking cases as a whole, it can be said with considerable degree of assurance that if diagnosis is made early enough and treatment is prompt and adequate, there is a reasonable prospect of relative recovery, and occasionally complete recovery may be expected, especially if there is an absence

of aortic incompetence, involvement of the coronary arteries and of myocardium, angina pectoris and aneurysm. Aortic regurgitation has a bad prognosis, even in the absence of angina and of aneurysm. Prompt and adequate treatment of simple aortitis may prevent any further involvement, and the patient's span of life be but slightly endangered.

Warthin did not believe that syphilis is ever more than clinically cured, and as a pathologist he did not believe that it ever became anything but a latent infection even under the most favorable conditions. Brooks utters somewhat similar sentiments, although he lays claim to have had the experience of getting such results by properly applied specific medication in late and so-called incurable cases of syphilis of the heart as to justify a good prognosis as to efficiency and duration in even seriously diseased hearts. He has repeatedly instanced complete clinical success in various forms of myocarditis, cases of arrhythmia, including partial and complete heart block, auricular flutter, auricular fibrillation, and angina pectoris.

The treatment of cardiovascular syphilis should be concurrently along two well defined lines of procedure—preventative and conservative. Specific attempts to arrest the progress of the syphilitic infection should precede the major course of treatment for the damaged heart. If the former is impracticable, little can be expected from the latter, which brings us around to reiteration of the old adage that prevention is better than cure, meaning that the ideal course of procedure would be to treat the very early stages of syphilis so intensely that advanced heart lesions may not develop.

When the micro-organisms of syphilis are firmly planted in the heart muscle, no course of treatment can be initiated with much optimism, the natural and progressively fatal course of the disease being altogether adverse to good prognosis at such a stage. Against the spirochetes the therapeutic weapons of warfare are mercury, arsenic, iodine, and bismuth. Digitalis, quinidin, theobromin, caffeine derivatives and salyrgan comprise our chief cardiac remedies.

There are many different forms of procedure in treatment, each clinician having his own preferred method. I do not claim that

the method I usually adhere to is superior to all others, but it has satisfied most of the demands I usually encounter, and in the aggregate it has been successful. The patient should first be hospitalized either at home or in an institution, when some form of mercury should be administered, provided there are no nephritic contraindications. Salicylate of mercury, 1 grain, may be given intramuscularly every second day until a total of 12 grains has been given, or until there are signs of mercurial poisoning or intoxication. For the first three days of this treatment, the drug should be pushed to tolerance, *i.e.*, it may be given every day instead of every second day, provided the urine examination shows no kidney injury. At the end of the 12 injection period, the heart problem may then be attacked with digitalis or any other appropriate remedy which would be indicated in cardiac conditions of other than syphilitic origin.

Following the mercury course, a 12 day course of iodine is then instituted, beginning with 10 grains of a solution of sodium iodide three times daily, increasing the dosage one grain or more per dose until tolerance is reached, at which point the dosage is held for the remainder of the 12 day period. At the termination of this course, I again return to the mercury, giving 12 consecutive doses as before, after which I give mercury and iodine on alternate days, the purpose being to saturate the patient with as much mercury and iodine as he can bear without discomfort. The next step is to initiate the use of salvarsan, the most convenient forms of which are arsphenamin and neosalvarsan, the dosage of either being governed by each individual case. A word of warning may here be interpolated against the indiscriminate use of the arsenical preparations. Dosage should never be too high, and in fact for safety's sake should be on the minimal scale. There is always a danger of inciting a further swelling of the intima of the small vessels of the heart, thus increasing the risk of thrombosis.

Arsphenamin (Ehrlich 606) is the most stable, most uniform, and most effective therapeutically of the Ehrlich synthetics. It may be given intravenously in an initial dose of 0.15 gm., and if well tolerated may be increased to 0.5 gm. The course should consist of from six to ten injections at weekly intervals. Then I return again to

the mercury and iodine on alternate days for a course of 12 doses of each. Some authorities favor a combined mercurio-arsenical treatment with a complementary iodine treatment. After an intermission of four to eight weeks, the process may be resumed again, arsphenamin alone, then mercury and iodine, at the stated intervals and dosage. When aortic insufficiency and aneurysm complicate the case, less favorable results are to be expected. Bismuth stands midway between arsphenamin and mercury, and is suitable for those patients who do not tolerate the other specifics. Given intramuscularly, its slower absorption renders its action less dangerous and more prolonged than arsphenamin.

At this point it might be mentioned that no patient can be considered cured, even in the absence of Wassermann findings, at the expiration of a course of treatment. A return of active symptoms or evidence of a progression of the syphilitic lesions, regardless of the Wassermann reaction, should indicate a resumption of another full course of treatment. Patients who have had such treatments should be examined at six to 12 months intervals over a period of years, as the known anti-syphilitic therapies have not yet proved themselves capable of much more than accomplishing symptomatic arrest.

Comparatively little can be done for aneurysm of the aorta. Iodids often diminish pain, as does morphin, especially in the latter stages. The delicate technical operation of gold-platinum wiring and electrolysis has shown favorable results in many cases, chiefly in the direction of diminishing the pulsation, reducing the pain, and delaying rupture. The purpose here is to promote coagulation of the blood and the obliteration of the sac, by organization of the thrombus. Resection of the sympathetic nerves close to the aneurysm or of the sympathetic trunk in the neck have also been done. No form of treatment, however, can ever restore the artery to its normal caliber.

An important phase in the general management of the disease is the intelligent training of the patient to take extreme care of his person and habits, so as to provide for his own comfort and welfare, and the safety of his family and associates.

Where there is marked heart weakness, rest in bed is essential, with limitation of fluids, and an easily digestible diet, and

morphin or other hypnotics, if necessary to secure sleep. Salyrgan is very effective in congestive heart cases with marked edema. It promptly reduces weight by expurgating fluids. If heart failure is severe, treatment should be directed towards its relief, the measures to be employed differing little from those indicated for treatment of heart failure of non-specific origin.

Amyl nitrite inhalations help in giving relief during the acute attacks of angina pectoris, in the causing of which syphilis is an important factor, especially in persons under 40 years of age. Morphin or nitroglycerine also are beneficial, the former being a sovereign remedy during the acute attacks, while the latter is considered to be of marked value in warding off attacks when given prior to such physical exertion as would be likely to invite it.

I consider that cardiovascular syphilis requires a minimum of two years fairly intensive specific treatment. Even then there should be periodic examinations and tests every six months until the Wassermann is consistently negative. Many chronic cases never require to be put to bed or hospitalized, while in the really severe conditions the cases should be made ambulatory whenever the improvement in the heart signs and symptoms show good response to exertion.

Can cardiac syphilis be cured? I do not believe that any authority would care to answer this question in the affirmative. Specific treatment of the circulatory phase of the disease will afford a degree of benefit and relief commensurate with that obtained by appropriate measures in any form of heart disease of non-syphilitic origin. The heart symptoms which develop in the very late phases of the disease seldom evidence complete symptomatic cure, and almost all of these cases require periodic specific treatment. The findings of the dead-house invariably indicate that once a heart lesion, always a heart lesion, for destroyed heart muscle tissue can never be replaced. The one great lesson I would like to bring home is this, that if the treatment is properly given before serious damage to the heart muscle has taken place, and notably before scar tissue has formed, symptomatic cure can be effected in most, if not all, instances.

The treatment of cardiac syphilis does not lie wholly within the sphere of the syphilographer or the venereal specialist.

The specific phase of the treatment is important, but it is not the whole object. The circulatory phase of the case demands just as careful and skillful management, and I therefore say that the treatment of cardiovascular syphilis is equally, if not more, within the province of the well equipped general practitioner or internist.

REFERENCES

Pothreau, Louis: Syphilitic Aortitis with Special Reference to Treatment. *Int. Clinics*, Vol. II, 34th Series, June, 1924.

Price, Frederick W.: *Disease of the Heart*.
 Warthin, A. B.: *Cardiovascular Syphilis*. 1928 *Proceedings, Inter-State, Post-Grad. Assem. of N. A.*
 Reid, William D.: *The Heart in Modern Practice*.
 Stokes, John H.: *Modern Clinical Syphilology*.
 Scott, Roy W.: *Syphilitic Disease of the Heart*. 1926 *Proceedings Inter-State Post-Grad. Assem. of N. A.*
 Reisman, David: *Disease of the Coronary Arteries*. *Med. Clinics of N. A.*, Phila. No., January, 1929.
 Anderton, Walter P.: *Syphilis of the Central Vascular System*. *Med. Clinics of N. A.* New York No., September, 1925.
 Frothingham, Channing: *Syphilis*. *Med. Clinics of N. A.*, Boston No., March, 1922.
 Boas, Ernst P.: *Diseases of the Aorta and Aortic Valves*. *Med. Clinics of N. A.*, New York No., November, 1922.
 Brooks, Harlow: *The Treatment of Syphilis of the Heart*. 1925 *Proceedings Inter-State Post-Grad. Assem. of N. A.*

MASSIVE HEMORRHAGE FROM A CORPUS LUTEUM CYST

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Intraperitoneal hemorrhage of ovarian origin frequently gives rise to harassing symptoms, but is rarely sufficiently massive to endanger life. Occasional case reports appear in the literature. Morton¹ reviewed the literature in 1931 and found 93 authentic cases. Sackett² in 1932 collected 26 cases from hospital records in and around New York City. Interrogation of many practitioners and several pathologists of wide experience, resulted in two cases seen by one pathologist, Lohr,³ who discovered the condition during examination of tissues removed from ectopic pregnancies.

The symptoms and signs of all the reported cases, as well as the findings by the pathologists, are so similar that one wonders why the correct diagnosis is never made before operation. In all probability, the reason lies in lack of consideration of the condition in differential diagnosis and the simulation of the more common abdominal conditions producing much the same clinical picture.

The case we report is characteristic even to the error in diagnosis.

The patient was a white single woman, 21 years of age. Her previous medical history was negative, except for an endocarditis at the age of 11 years, from which she recovered and her heart has remained fully compensated.

The menses, which began at the age of 14 years, are regular and of the 28 day type. She has backache and crampy uterine pain until the flow is well established. The flow is of 5 days duration and normal in amount. The last period was 23 days previous to admission.

At 3:00 o'clock on the afternoon of admission, the patient experienced a rather sudden, severe, generalized abdominal pain, accompanied by vomiting. Within three hours after onset, the pain localized in the right lower quadrant.

Physical examination at the patient's home revealed a normal temperature and pulse rate. There was tenderness and rigidity over the right lower quadrant, most marked over McBurney's area.

A provisional diagnosis of obstructive appendicitis was made and hospitalization and further study

advised. While the patient was dressing she complained of dizziness and fainted. The pulse rose to 132 and she presented the picture of shock. The diagnosis was reconsidered, and a ruptured ectopic pregnancy seemed probable, in spite of a negative clinical history.

The patient was taken to the hospital without further delay and preparation made for immediate laparotomy. The serious emergency of the situation made laboratory examination inadvisable and in this case would have been of no aid in diagnosis.

Bimanual examination under anesthesia revealed a small uterus, a firm cervix and the adnexa were normal to palpation. The abdomen was opened in the midline and approximately two quarts of fluid and clotted blood was found. In the vicinity of the right tube and ovary, there were old clots partially organized.

The uterus, both tubes and the left ovary were normal. The right ovary was slightly enlarged and contained many small cysts. On the posterior surface of the ovary there was free bleeding from a rupture 1 cm. long resembling an incised wound.

The patient's condition was precarious and the right tube and ovary were removed with speed and the abdomen closed. A 500 c.c. blood transfusion was given immediately after operation, supplemented by glucose and saline for the next 48 hours. Convalescence was uneventful and the patient left the hospital on the fourteenth day. Menstruation began the day after operation, 24 days after the previous period, doubtless due to removal of the corpus luteum.

The pathological report showed an edematous ovary, with numerous small follicular cysts and a thickened tunica albuginea with attached tube. On the posterior surface of the ovary was a rupture 1 cm. in length which communicated with a cyst 2 cm. in diameter. The cyst contained a gelatinous chocolate-like material which on microscopic section showed the structure of a degenerated hemor-

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rhagic corpus luteum of the first stage. The microscopic picture of the rest of the ovary confirmed the gross observation.

In considering the history and findings in this case, one would be justified in supposing that there was continuous slight bleeding from the cyst since ovulation and a massive hemorrhage ushered in the clinical attack. We believe the cause of hemorrhage in this case was cystic degeneration of the ovary and fibrosis of the tunica albuginea, with subsequent interference with follicular maturation for so-called chronic cystic oöphoritis causes hyperemia of the genital organs.

Small ovarian hemorrhages in young women frequently give rise to peritoneal irritation and are a common source of error in the diagnosis of appendicitis. In massive hemorrhage, the symptoms are very severe and the lack of definite physical find-

ings make the differential diagnosis very difficult. One writer impresses the importance of the clinical history in lieu of all findings.

It has been our experience that the menstrual and sexual history in unmarried women is often unreliable. Even though the diagnosis of this condition is in error 100 per cent. Intraperitoneal hemorrhage of the extent that occurred in this case produces signs and symptoms sufficiently definite to place them in the "surgical abdomen" group, and the condition of the patient prompts the surgeon to operate without delay.

REFERENCES

1. Morton, Paul C.: Intra-abdominal Hemorrhage of Ovarian Origin. New York State Journal of Medicine, 32:196-197, Feb. 15, 1932.
2. Sackett, Nelson B.: Intraperitoneal Hemorrhage of ovarian origin. American Journal of Obstetrics and Gynecology, 23:849-857, June, 1932.
3. Lohr, Oliver: Saginaw, Michigan. Personal communication.

REPORT OF COMMITTEE ON BIRTH CONTROL*

SECTION ON OBSTETRICS AND GYNECOLOGY

The Committee on Birth Control was appointed by the chairman of the Section on Obstetrics and Gynecology for the purpose of investigating and summarizing available information relative to the status of Birth Control theory and practice, and to determine the attitude of the medical profession of the State of Michigan concerning this subject.

To accomplish this purpose, a bibliography comprising more than 1,800 books, articles, pamphlets and references to this subject was compiled. The five members of the Committee were then delegated to investigate and summarize in writing the main phases of Birth Control, which included the medical, legal, religious, social and economic aspects. These reports have been completed and will be published *in toto* in the JOURNAL of the Michigan State Medical Society. A questionnaire was sent to members of the Michigan State Medical Society embodying certain questions pertaining to the subject. The replies to this questionnaire were analyzed by the University Statistician, with the following results:

One thousand eight hundred and forty-

six questionnaires were returned by Society members from seventy-five of eighty-three counties. Summaries of the answers submitted to each of the questions are as follows:

Question 1. Are you in favor of birth control? If not, please state your objections.

In response to this question 1,538 or 83.3 per cent answered YES, 207 or 11.2 per cent, NO, while 101 or 5.5 per cent gave no answer. A favorable attitude toward birth control was expressed by majority of physicians engaged in all types of practice, gen-

*This report and that following it, namely the report of the Committee on Clinical Problems, were presented before the Section on Obstetrics and Gynecology at the meeting of the Michigan State Medical Society, September, 1933.

TABLE I. ATTITUDE ACCORDING TO SPECIALTY

Question: Are you in favor of birth control?

Specialty	Total	Yes	No	No Answer	Per cent Favorable
General practice	669	554	85	30	82.8
Gynecology, Obstetrics	177	152	17	8	85.5
Pediatrics	69	62	3	4	89.8
Neurology, Psychiatry	32	28	4	0	87.5
Surgery	176	145	18	13	82.3
Internal medicine	127	105	13	9	82.6
Tuberculosis	15	14	14	1	93.3
All others	581	478	53	36	82.2
Totals	1846	1538	207	101	83.3

TABLE II

Question: Are you in favor of birth control?

Replies tabulated according to counties with twenty or more returns.

County	Total	Yes	No	No Answer
Bay	24	19	2	3
Berrien	30	25	3	2
Calhoun	55	43	5	7
Genesee	66	53	7	6
Ingham	69	59	6	4
Jackson	44	34	6	4
Kalamazoo	48	41	5	2
Kent	128	119	5	4
Muskegon	35	27	7	1
Oakland	63	56	4	3
Ottawa	20	18	2	0
Saginaw	45	35	8	2
Washtenaw	75	68	5	2
Wayne	683	557	90	36
	1406	1172 (83.3%)	157	81
All others	440	366 (83.1%)	50	20
Totals	1846	1538	207	101

eral practitioners and specialists alike. A detailed analysis is shown in Table I.

Replies to this question when tabulated according to counties, shows that approximately 76 per cent of all replies were obtained from the fifteen most densely populated counties. The same percentage of favorable replies was obtained from this group as from the remaining sixty localities (83 per cent). There appears to be no difference between urban and rural opinion on this question. Table II summarizes this analysis.

The objections stated by 144 of those who are unfavorable to Birth Control are tabulated in Table III. Religious objections comprise the largest single classification.

TABLE III

*Question*Are you in favor of birth control? *If not, please state your objections.**Objections*

Religious	45
Unnatural	14
Public would take advantage of it.....	19
Race suicide	11
Ignorance	7
Sexual abuse.....	9
Not practical.....	9
Injures health.....	7
Unlawful	3
Unnecessary	2
Patriotic reasons	2
Not in public clinics.....	3
Sterilize unfit.....	1
Other answers	12
No objections.....	1702
Total	1846

Question 2. Do you prescribe contraceptives in your practice?

This question was answered in the affirmative by two-thirds of all those who replied; 988 or 53 per cent answered without qualification, 245 give advice with reservations, whereas 522 or 28 per cent give no advice at all, although this group includes many who are not opposed to birth control in principle; 91 or 5 per cent did not answer this question. Table IV summarizes these replies.

TABLE IV

<i>Question</i>	
Do you prescribe contraceptives in your practice?	
<i>Replies</i>	
YES	988 (54%)
No	522
Under control.....	225
When patient asks.....	11
When advisable.....	9
No answer.....	91
Total	1846

Question 3. If so, do you give this information for specific health indications only?

As shown in Table V, 47 per cent give contraceptive information for other than health indications; approximately 25 per cent limit the giving of contraceptive information to patients for health reasons only; 500 did not answer this question.

TABLE V

<i>Question</i>	
If so, do you give this information for specific health indications only?	
<i>Replies</i>	
No	659
YES	460
Economic, health.....	161
Social, economic, health.....	27
Social, health	21
Social	4
Heredity	1
Health, heredity, social.....	1
No answer.....	500
Total	1846

Question 4. Do you feel that there is a need for contraceptive centers for indigent patients in your community?

In answer to this question 55 per cent answered Yes, while 36 per cent gave various negative reasons; 144 gave no reply. Forty-three were of the opinion that contraceptive centers already functioning adequately filled the need; seventy-four were opposed to the clinic idea stating that such functions should be delegated to the local

physicians. Table VI gives a detailed tabulation of replies.

TABLE VI

<i>Question</i>	
Do you feel that there is a need for contraceptive centers for indigent patients in your community?	
<i>Replies</i>	
YES	1023
No	532
No, use local M.D.....	74
Already here.....	43
Would not be used if given; indigent too lazy, and similar answers.....	18
Yes, strictly for indigent.....	11
No, should not marry.....	1
No answer.....	144
Total	1846

Replies to this question were also tabulated according to counties. Responses favorable to the establishment of contraceptive centers for indigents were slightly more numerous (58 per cent) in the more thickly populated localities than in others (46 per cent). This difference might seem to indicate that welfare problems of indigents are more apparent in urban than in rural communities. Table VII shows these figures.

Question 5. What methods do you recommend?

The 1,273 replies to this question give about thirty different answers which are difficult to properly evaluate and classify because of their divergence. These figures are, therefore, not reproduced in detail. Sixty per cent recommended methods which are considered standard or satisfactory; 39 per cent prescribe diaphragm with spermicidal jellies.

As a corollary to this investigation, the same questionnaire was sent to heads of Departments of Obstetrics and Gynecology of medical schools throughout the country, with an additional question concerning the teaching of contraceptive methods to medical students. The response to this questionnaire is shown in Table VIII.

It will be seen that the answers given follow closely those given by the profession in Michigan at large. Although the numbers of returns are few (41) the vast majority are in favor of the birth control principle.

Question 6 (to educators only). Do you teach contraception to your medical students?

Contraception apparently is a part of the

TABLE VII

Question: Do you feel that there is a need for contraceptive centers for indigent patients in your community?
Replies tabulated according to counties with twenty or more returns.

County	Total	Yes	No	No Answer	Already here	Local M.D.	Others
Bay	24	18	4	2			
Berrien	30	19	7	2		1	1
Calhoun	55	33	12	6	2	1	1
Genesee	66	35	21	7		5	
Ingham	69	37	19	10		2	1
Jackson	44	22	16	2	2		2
Kalamazoo	48	19	13	5	4	5	2
Kent	128	83	21	8	10	2	4
Muskegon	35	13	13	5		3	1
Oakland	63	44	8	3	4	3	1
Ottawa	20	6	14				
Saginaw	45	22	16	5		1	1
St. Clair	21	11	10				
Washtenaw	75	47	18	7		3	
Wayne	683	389	175	54	21	34	10
	1406	819 (58.2%)	367	116	43	60	24
All others	440	204 (46.3%)	165	28	0	17	6

TABLE VIII. QUESTIONNAIRE TO TEACHERS OF OBSTETRICS AND GYNECOLOGY

Question	Replies (41)
Are you in favor of birth control?	YES 38 (93%) No 1 No answer..... 2
Do you prescribe contraceptives in your practice?	YES 27 No 3 Under control..... 7 When patient asks..... 1 When advisable..... 3
If so, do you give this information for specific health indications only?	YES 16 No 15 Economic, health..... 3 Social, economic, health..... 3 No answer..... 4
Do you feel that there is a need for contraceptive centers for indigent patients in your community?	YES 20 No 13 Already here..... 3 Would not be used..... 1 No answer..... 4

medical curriculum in at least twenty-seven medical schools; in five institutions no detailed instruction is given although the general principles are discussed to some extent. Table IX summarizes these replies.

TABLE IX

Question
Do you teach contraception to your medical students?

<i>Replies</i>	
YES	27
No	6
Very little, or only general principles.....	5
Yes, if I were in teaching capacity.....	1
No answer.....	2
Total	41

An analysis of Birth Control activities in the State of Michigan to date reveals the following:

1. The Michigan Birth Control League, an organization of laymen and physicians, has been established since 1931, and is actively promoting the movement by establishing subsidiary organizations throughout the state and providing interest and demand among the laity for scientific methods of contraception. The League has a total of 477 members; its Advisory Council is comprised of prominent physicians, clergymen, lawyers, and business men and women throughout the state.

2. Resolutions indorsing the aims and activities of the Michigan Birth Control League were adopted by the Calhoun and Kent County Medical Societies; Menominee and Schoolcraft County Medical Societies have indorsed Mrs. Sanger's work on Federal Legislation.

3. Clinics giving contraceptive information have been established in the following localities:

Detroit: Mothers' Clinic, 1601 Blaine Avenue; Harper Hospital, Maternal Health Clinic; Woman's Hospital, Maternal Health Clinic.

Grand Rapids: Department of Health, Blodgett Hospital, Butterworth Hospital, Social Service Association.

Royal Oak: 111 South Tray Street.

Jackson: 503 Carter Building.

Pontiac: 322 Riker Building.

Battle Creek: 41 North Washington Street.

Approximately 7,000 women have been given contraceptive information to date.

Other localities have arranged for the giving of contraceptive information to indigents through local physicians without the establishment of clinics (Kalamazoo, Ann Arbor).

CONCLUSIONS

1. The response to the questionnaires to the medical profession and the activities of lay organizations throughout the state indicates a very intense interest in Birth Control. An analysis of the questionnaires returned indicates that a favorable attitude is held by a large majority of the profession.

2. "A survey of the medical aspects of birth control shows that medical indications for the use of contraceptives vary considerably in the opinions of different observers. It seems to be generally believed, however, that by careful use of contraceptive procedures the health of certain individuals afflicted with disease can be maintained at a higher level and also that by the proper spacing of children and limitation of their numbers that a higher health level can be maintained by society in general. It is suggested that a more general use of contraception may aid in decreasing the incidence of abortions with their attendant fetal and maternal mortality and morbidity. Finally, we must conclude that there is at present no perfect method of contraception. All of

the procedures in use have been known to fail, and all of them have medical contraindications of varying importance."

—NORMAN KRETZSCHMAR, M.D.

3. "The legal status of Birth Control in Michigan, as interpreted by the Attorney General, indicates that there is no law preventing the giving of birth control information or materials by physicians as professional advice. The Federal Law concerning the transmission of contraceptive information and material through the mails by inter-state commerce has practically been annulled by recent decisions of the Federal Courts."—CLARENCE TOSHACH, M.D.

4. "While the Catholic Church is irrevocably opposed to any form of contraception advanced by Birth Control advocates, the opinion held by Protestant Churches is in a state of transition, a few denominations openly advocating such procedures, some gradually approving under more rigid interpretations, while others are still belligerently opposed. Opposition to Birth Control when expressed by religious bodies appears to be more concerned with *method* than with principles; family regulation through 'natural methods' (abstinence, observance of the so-called period of 'physiological sterility') is considered permissible, whereas 'unnatural methods' (contraceptives) are condemned by these groups."—B. W. MALFROID, M.D.

5. "The social and economic aspects of birth control are too various to permit a brief summary. Permanent criteria for determining optimum conditions of society have not been established since social and economic trends are constantly shifting. There is no positive evidence that 'race suicide' has resulted from the use of contraceptives. It has been suggested that eugenic aims can best be realized by extending the knowledge of contraception to, or by enforcing sterilization upon undesirable elements of society whose rate of propagation is in excess of that of the apparently more desirable classes. A judicious birth control program, however, must also combat voluntary and involuntary sterility among the eugenically more desirable elements if the harmful effect of a differential birth rate is to be overcome. In the final analysis the physician must be guided by the social

and economic needs of the individual and the family, for what is best for the health, and the social and economic welfare of the individual is undoubtedly best for the race."—H. C. MACK, M.D., and H. M. NELSON, M.D.

The Committee hereby wishes to express its appreciation of the hearty coöperation of the profession, and in particular wishes to thank an anonymous physician whose gen-

erous offer of funds to cover the cost of printing and mailing the questionnaires made this study possible.

Respectfully submitted,

HAROLD C. MACK, M.D., Detroit,
Chairman

NORMAN R. KRETZSCHMAR, M.D.,
Ann Arbor

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HARRY M. NELSON, M.D., Detroit

C. TOSHACH, M.D., Saginaw

REPORT OF COMMITTEE ON CLINICAL PROBLEMS

SECTION ON OBSTETRICS AND GYNECOLOGY

This committee was appointed by the chairman of the Section, having in mind the many clinical problems in the field of gynecology and obstetrics as yet unsolved or about which there is no unanimity of opinion. The idea was advanced that by intensive concentration some definite conclusion might be reached which would be of benefit particularly to the general practitioner of medicine who does not have access to material of sufficient volume to make his own conclusions valuable; with the hope that morbidity and mortality rates could be improved especially if wide publicity could be given to the results of these studies.

Several things naturally presented themselves for decision on the part of your committee if such study was to be successfully carried out, viz.:

1. The choice of problems for investigation.
2. The method of carrying out the studies.
3. The period of time necessary to collect data on cases in sufficient numbers to be valuable.
4. The interpretation and evaluation of statistics collected.

It was the unanimous opinion of the committee that the initial clinical problems should be of as universal interest to the profession as possible—problems which confront the practitioner in his daily routine. At the same time these, at first, should be as simple as possible in so far as the collection of the necessary material is concerned. With this in mind two topics for study were chosen:

1. The Treatment of Abortion.
2. The Value of Vaginal Antiseptics During Labor.

The methods of carrying out the studies presents many difficulties, but it was finally decided that until some experience is gained in the actual application of the work that they should be confined to the larger centers throughout the state with the hope that the well organized hospitals will coöperate in

the collection of data to the extent, at least, of allowing members of their staffs as representatives of the committee to collect the necessary data. It was not thought advisable to burden the practitioner with the tedious but necessary spade work.

As to the time necessary to collect data in sufficient amount it was thought, after computing the numbers of cases which would probably be available, that one year would be required to make the work authoritative.

Your committee is fully aware of the many pitfalls associated with the collection of statistics and realizing that incomplete and inaccurate figures are worse than none, have given special attention to the formulating of the questionnaires to be used, which are to be placed in the hands of well qualified men in different sections of the state for completion. The questionnaires will be collected from time to time, conclusions drawn that seems warranted to the committee as a whole and the results made known to the profession.

To complete the plan heretofore outlined there remains only to obtain the coöperation of representatives in various centers, which it is hoped will be accomplished in the near future.

WARD F. SEELEY, *Chairman*.

DISEASE AS A FACTOR INFLUENCING HISTORY*

J. H. DEMPSTER, M.D.

DETROIT, MICHIGAN

Historians rarely treat their subject from the biological point of view, which, in many instances, is of as great importance as wars, state policies, religion and morals. "The history books of a former day," according to Sir George Newman,[†] "record in much detail the more outstanding and arresting of the events which concern war, but they pass over with comparatively scanty reference the changes in population and their causes, the struggle of the mass of the people to obtain food, and the profound effect of widespread disease. Yet the pestilences of the ancient world, the plague of the Antonines and of the age of Justinian, the Black Death, the epidemics of the seventeenth and eighteenth centuries, the disease which has followed armies from the Thirty Years' War to Napoleon and our own times, the pandemics of influenza—these have exerted an effect upon the history of mankind on the whole more powerful, fateful, and enduring than any other single factor. As disease changes or terminates the life of the individual, so also it alters the course of human history." The causes which produce racial or national supremacy or decay are many and complex. Yet when we consider the tragic results of disease, great even today with the achievements of preventive medicine, the effects of disease upon population in ancient and medieval times challenge description. In an address, Dr. E. S. Judd, President of the American Medical Association in 1932, estimated that of one hundred and twenty million people of the United States, two million were sick enough to be in hospitals all the time. Nearly two per cent of the population were seriously sick and an additional ten per cent were slightly sick at all times. Ninety per cent of illness is chronic and ten per cent acute and this in a country of 150,000 physicians, 200,000 trained nurses in addition to 50,000 dentists and about 8,000 technicians, all working in the interest of curative medicine and public health. The preventive feature of medicine is a matter of very recent development.

It is said that Mommsen, the author of the History of Rome, on being asked why he did not go on to tell the cause of the decline and fall of the Roman Empire, replied that with all his study and historical

research he had never been able to tell just what was the cause. Of this, as other events, there are many causes. Science, however, has at last put forth one plausible explanation that also sheds light on the downfall of such countries as Greece and Egypt. The shadow of malaria that still hovers over Greece and Italy suggests an answer to the question put to the great historian. Malaria alone has claimed more victims than all the wars of historical record. Sir Ronald Ross maintained that until recently malaria caused as many as two million deaths a year. This estimate is for the whole world. Malaria before the discovery of the remedy, cinchona bark and later its alkaloid quinine, was a very deadly disease. Both Alexander the Great in 323 B. C. and Alaric the commander of the Visigoths (circa 410 A. D.) were presumed to have been victims.

It has been argued that before the dawn of the era of preventive medicine the law of the survival of the fittest prevailed, that disease carried off the weakling, thereby producing a sturdy race by process of selection. A case in point was the hardy North American Indian. It takes hundreds of years for the establishment of racial immunity to disease. Races that have persisted in isolation have gone down on contact with explorers and colonists who have introduced smallpox, syphilis or tuberculosis. The advent of European civilization had a disastrous effect on the Indian of this continent.

Malaria, however, does not confer immunity on those who become infected. According to Sir Ronald Ross, the conqueror of Greece was not so much the Macedonian or the Roman as that great tyrant malaria. Without going into the pathology, it might be said that, if not treated with quinine, the parasites remain in the body for years causing febrile relapses, anemia and enlargement

*Read before the Medical History Club of Detroit.

[†]Newman, Sir George, *The Rise of Preventive Medicine*: Oxford University Press, 1932.

of the spleen. Under such conditions those so afflicted live a life of semi-invalidism.

The anopheles mosquito, the carrier of the plasmodium, thrives in marsh land. The topography of Greece lends itself admirably to conditions suitable to the breeding of mosquitoes with its mountains and its marshy valleys. Ross* maintained that while malaria-bearing gnats may have been present in Greece from prehistoric times, it was quite possible "that if ancient Greece was peopled by invaders from Northern non-malarial latitudes, it might have had no malaria for ages in spite of the presence of anophelines, until some person with the parasites in his blood happened to visit the country." If such a person were bitten by insects he would carry the infection, which would account for the universality of the disease. Greece may therefore have been exempt from it until traders or soldiers brought it from Asia or Africa.

It is thought that Greece was free of it during the Golden Age. Modern Greece according to this same writer is intensely malarious. He estimated that half of the children were infected in 1907 before the annual malaria season had begun. Jones† claims that by 300 B. C. the Greeks had lost much of their manly vigor and intellectual strength. Malaria differs from many diseases in that it does not make a race strong by weeding out the unfit. It produces a general lowering of vitality without producing a very great mortality. Even when it confers a comparative immunity, it is at the expense of nervous debility and mental despondency. It is readily seen that a race of people so afflicted would be as helpless as if they were the victims of an invading army.

Jones has written a very learned essay in which he quotes from the Greek classical writers to identify references to the malaria syndrome, fever, enlarged spleen and the cyclic nature of the febrile reaction.

The destruction of nations appears to have resulted more directly from those diseases of an insidious nature than from those of a violent or acute character. The Plague of Athens, which is so vividly described by Lucretius, lasted from 525 to 430 B. C. during the golden age, yet its effect upon the

intellectual life seems not to have been marked. In severity it rivalled the Black Death of the middle ages. According to Lucretius:*

The plague has proved to be "God's terrible medicine for humanity," where it has led to improvements in sanitation and desirable social adjustment.

Malaria spread more slowly in Italy, since the topography of Italy is less favorably adapted to the growth of the mosquito. It is fairly well established that the disease had become endemic in Italy about 200 B. C.; the evidence of its prevalence is not so clear as that for its presence in Greece. Celsus, however, whose treatise appeared about 50 A. D., described fevers of an intermittent character which were supposedly malaria. It is said to have been introduced into Italy by Hannibal's Carthaginian troops, since Africa is apparently the original home of the disease. According to Livy, a severe epidemic prevailed in Italy in 208 B. C. which resulted in widespread lingering illness. Galen wrote of a most virulent form of malaria in Rome in 164 A. D.

Regarding the effect of malaria on the character of the people, North in his work on Roman Fever maintains that "The effect of the disease on the people is to unfit them for labor, to cause loss of time, loss of money, and generally to diminish their producing powers, whilst at the same time the race, if left to itself, tends toward moral and physical degradation; it is perhaps the most incapacitating disease to which man is liable." Rome had become more congested in population since the second Punic war and the country of Italy had become more sparsely populated. "The Roman people became a tainted and debased folk penned up

*De Rerum Natura, Lines 1136-1153, Book VI, Lucretius.

'Twas such a manner of disease, 'twas such
Miasma in Cecropian lands
Whilom reduced the plains to dead men's bones,
Unpeopled the highways, drained of citizens
The Athenian town. For coming from afar,
Rising in lands of Ægypt, traversing
Reaches of air and floating fields of foam,
At last on all Pandion's folk it swooped;
Whereat by troops unto disease and death
Were they o'er-given. At first, they'd bear about
A skull on fire with heat, and eyeballs twain
Red with suffusion on blank glare. Their throats,
Black on the inside, sweated oozy blood;
And the walled pathway of the voice of man
Was clogged with ulcers; and the very tongue,
The mind's interpreters, would trickle gore,
Weakened by torments, tardy, rough to touch.

*Malaria, a Neglected Factor in the History of Greece and Rome. Jones, Ross, Ellett.

†Loc cit.

within the walls of the city," writes W. H. S. Jones.* Even the infusion of new blood from other parts of the Empire soon became infected and Rome witnessed a decline. Perhaps it is too much to insist that malaria was the sole cause; it certainly was not. However, no people can be long subjected to the debilitating influence of this disease and survive. To quote this writer: "Malaria made the Greek weak and inefficient; it turned the sterner Roman into a bloodthirsty brute. If *μελανχολία* (Greek) produced crossness, *atra bilis* (Roman) made its victims mad. The terrible pictures of life in the first century A. D. as painted by Tacitus and Juvenal, show that Roman society was not only wicked but diseased. The extravagant cruelty, the wild desire for excitement (the 'Roman holiday'), the absence of soberness and control, all point clearly to some physical defect. That malaria was endemic in Rome is an undoubted fact, and the result of several generations being subject to its influence would certainly be a change of national temper."

It is not necessary to give, nor would space permit, a detailed reference to all biological reverses that have affected the various nations. The examples of Egypt, Greece and Rome show how the history of a country is radically modified by the insidious inroads of sleeping sickness and malaria. It is a far call from the decline and fall of the Roman Empire to the middle of the fourteenth century when we come upon an epidemic which was sudden, severe and fatal—the Black Death. This great catastrophe has not received just appreciation at the hands of historians. Perhaps the most graphic description is that of Boccaccio,* who described the plague at Florence:

"About the beginning of the yeare it also began in very strange manner, as appeared by divers admirable effects; yet not as it had done in the East Countries, where Lord or Lady being touched therewith, manifest signes of inevitable death followed thereon, by bleeding of the nose. But there it began with young children, male and female, either under the armpits, or in the groine by certaine swellings, in some to the bigness of an apple, in others like an Egge, and so in divers greater or lesser, which, (in their vulgar Language) they termed to be a Botch or Boyle. In very short time after those two infected parts were growne mortiferous, and would disperse abroad indifferently, in all parts of the body; where-upon such was the quality of the dis-

ease, to show itselfe by black and blew spotted, which would appeare on the armes of many, others on their thighes, and every part else of the body; in some great and few, in others small and thicke.

"Now as the Boyle (at the beginning) was an assured sign of neere approaching death; so proved the spots likewise to such as had them; for the curing of which sicknesse it seemed, that the Physitians counsell, the vertue of Medicines, or any application else, could not yield any remedy; but rather it planely appeared, that either the nature of the disease would not endure it, or ignorance in the Physitians could not comprehend from whence the cause proceeded, and so by consequent, no resolution was to be determined. Moreover beside the number of such as were skilful in Art, many more both women and men, without ever having any knowledge in Physicke, became Physitians, so that not only few were healed, but (wellneere) all dyed, within three days after the saide signs were seene; some sooner, and others later, commonly without either Feaver, or any other accident."*

The subject of Boccaccio's *Decameron* is woven around the Black Death in Florence; it consists of adventures and stories of a number of young people who fled from their native city to escape the disease. Boccaccio was an Italian novelist who describes his surroundings with a novelist's pen. His description tallies well, however, with that of Cauvin of Paris and Montpellier, whose account is that of a physician:

"A burning pain, starting either in the groin or under the armpits, gradually spread over the pre-cordial region, and the vital parts were attacked by a mortal fever. The heart and lungs were affected and the respiratory passages were choked with the poison. The strength suddenly declined and the patient could only survive a few days. There seemed no refuge from this scourge, neither heat nor cold, nor the fresh country air, the cold north or the warm south. So contagious was it that when the sickness commenced in a house scarcely one escaped. The slightest contact, a single breath, sufficed to transmit the disease. Those who tried to help the sick fell victims. The ill nourished were easily stricken. Those who lived a temperate life fared best. The number of the dead was greater than the survivors, and cities were deserted, thousands of houses standing with open doors or locked up, their owners dead or fled."

There is little doubt but that the scourges of 1349 and 1665 were the same and that both were like the pestilence of Justinian, namely bubonic plague.

The origin of the plague, it is said, lay in China, where it was found to be raging in 1333. It passed from China to India, Persia and Russia, following main roads of commerce to Europe. In the year 1347 the disease arrived in Sicily. It can be definitely traced to Italy, thence to Austria, France, and finally to England, where it

*Malaria a Neglected Factor in the History of Greece and Rome.

*From an English Translation made in 1625. The translator is unknown.

raged in 1348. During the years 1345 to 1350, half of the population of Europe was estimated to have fallen victims. According to statistics drawn up at the request of Pope Clement VI, the number of deaths for the whole world was 42,836,485. Compare this with the deaths caused by the recent great war and one may have some faint idea of the influence of this terrible affliction as a factor in human history.

The effects of the Black Plague in carrying off men and women of extraordinary ability cannot be estimated. There is a long line of rulers of various European countries among the victims, as well as such noted personages as Guy de Chauliac, the celebrated fourteenth century surgeon, and a contemporary, Gentile di Foligno. The death list included also the painters Pietro and Ambrogio Lorenzetti (1348), Holbein the Younger* (1543), Titian (1576), and many others famous at the time.

Regarding the mortality, many towns and villages were completely depopulated. According to Guy de Chauliac, three-quarters of the whole population of France died. Italy lost half of her population. Venice had become so much depopulated that foreigners were invited to settle in the city with the offer of acquirement of citizen rights after two years' residence. In Florence, where the population was estimated at 130,000 inhabitants, only 30,000 were left. It was reported that in London scarcely one man in ten survived. Hundreds of ships at sea floated as derelicts manned only by corpses.

In England alone it is estimated that after the Black Death (bubonic plague 1348-9) the population was reduced from four million to two million. According to Gibbon, the historian of the Decline and Fall of the Roman Empire, the plague in the time of Justinian, which lasted from 542 A. D. to 594, resulted in the death of one hundred million persons. In the wake of the pestilence were vacant houses, abandoned towns, neglected agriculture, paralysis of all forms of industry, a redistribution of both wealth and poverty; the governing classes were de-

prived of their authority; arable lands were turned to pasturage.

There was also a psychological change as manifest in a dominant fatalism as well as laxity of morals. There was an absence of self-restraint, particularly when the poor found themselves in possession of suddenly acquired riches. Of course, some were sobered and looked to the future for a way out of it all, and as a result of the rationality of the few, we had the beginning of the defense against epidemic disease. The early efforts toward control were feeble. As one authority stated, "The Black Death came to an end in 1349 and in 1666 not on account of direct action taken, but because it had spent its force and exhausted the susceptible material." The early defenses against epidemic disease were of a social nature, namely sanitation, the burning of infected material, though, needless to say, the nature of infection was not known; the supervision and isolation of the sick, and by quarantine, since it had been learned that the disease spread by contact. Nothing could be expected of the medicine of the day, which at best was crude and unscientific. Even during the later plague of 1665 of which Sydenham was contemporary, the father of modern medicine is said to have taken no part in the relief of the suffering nor in prevention, but left London to her fate.

The effect upon England of the great mortality from the Black Death was little short of a complete social revolution in which the poor of the nation were the chief sufferers. Thorold Rogers wrote, "It is well known that the Black Death in England at least spared the rich and took the poor. And no wonder. Living as the peasantry did in close, unclean huts, with no rooms above ground, without windows, artificial light, soap, linen; ignorant of certain vegetables, constrained to live half the year on salt meat; scurvy, leprosy and other diseases which are engendered by hard living and the neglect of every sanitary precaution were endemic among the population."*

The Black Death had a far different effect upon England from what malaria had upon Greece or the pestilence upon Justinian Rome. Feudalism had survived in a modified form into the fourteenth century not only in England but over much of Europe. Parenthetically, Feudalism dominated prac-

*Boccaccio was thirty-five years old at the time of the Black Death in Italy.

*Hans Holbein, the younger (1497-1543) was a victim of the plague though not of a great pandemic plague. Among the great men whose lives were cut short by plague other than the historic pandemics may be mentioned William Gilbert (1540-1603) physician to Queen Elizabeth. Gilbert is noted for his pioneer researches in Magnetism and Electricity; of him Dryden wrote:

"Gilbert shall live till lodestones cease to draw
Or British fleets and boundless ocean awe."

*Fortnightly Review. Chapter VIII, page 192.

tically the whole of western Europe. Its growth was not sudden but insidious, and it is needless to say the effect upon the people was profound. Perhaps we approximate the truth when we say its decline was as gradual as its evolution, since it yielded only to the great commercial forces of voyage and discovery, of trade and commerce, and finally to the mechanization of industry. Traces of it are still evident, particularly in the history of law. As late as the seventeenth century a form of feudalism was introduced from France into Canada known as the signorial system. It is not apropos of the subject to go into details in regard to the operation of feudalism, except that the king owned the land which was parcelled out to the barons, who in turn sublet it to their vassals. The remuneration was a matter of service, which each was bound to render to his superior, from peasant to king. Eventually, instead of rendering service to the lord for use of the land, many serfs had come to discharge the obligation in money. The villeins who paid in money, however, were not entirely free from the soil. The reduction in population brought about by the plague produced a great scarcity of labor and as a result the price of labor rose to such a degree that the lords were unable to hire, and as a result many thousands of acres of land remained untilled. Many of the landlords solved their labor problems, as we have said, by turning their holdings into sheep pasture which required the service of only a shepherd. Parliament endeavored to legislate in the interests of the landlord by a Statute of Labor, which endeavored to fix wages, and prices also, at the old standards. Statutory limitation of wages failed, however, in the face of the inexorable law of supply and demand. The effort to regulate wages culminated eventually in the Peasant Revolt.

The Black Death in reality produced a marked change in the temper of the surviving lower classes in the last half of the fourteenth century. During this period we have the beginning of our modern labor movement. The peasant became class conscious and began to demand rights. The slogan of the times was:

When Adam delved and Eve span,
Where was then the gentleman?

There was general withdrawal of allegiance to the medieval church and state and,

according to Trevelyan, exalted by this new order of ideas, the peasants carried on the struggle for their freedom.

The other great plague in England was that of 1665. It appears to have pursued a similar direction to that of 1348, namely, from Asia, along the Mediterranean countries, thence northward through Italy to Holland, where it was reported of a violent character at Rotterdam and Amsterdam in 1663. It reached London early in December, 1664, and the following year produced great mortality. We get a graphic account of its ravages in DeFoe's* *Journal of the Plague Year*. "If I may be allowed to give my opinion," writes DeFoe, "by what I saw with my eyes and heard from other people that were eye-witnesses, I do verily believe the same, viz., that in London there died at least 100,000 of the plague only, besides those that died in the fields and byways and secret places out of the compass of the communication, as it was called, and who were not put down in the bills though they really belonged to the body of the inhabitants."

In the suddenness and severity of onset and the great mortality among the afflicted, the plague and the Black Death of the fourteenth century were, as has been said, the same. Interesting are the accounts of the two famous diarists of the mid-seventeenth century. Samuel Pepys' entries in his diary are as follows:

"June 21st.—I find all the town going out of town, the coaches and carriages being all full of people going into the country."

"June 25th.—The Plague increases mightily, I this day seeing a house, at a bitt-maker's over against St. Clement's Church, in the open street, shut up; which is a sad sight."

"June 28th.—On my way to Westminster Hall I observed several Plague houses in King's Street and the Palace."

"June 29th.—To Whitehall, where the court was full of waggons and people ready to go out of town. This end of the town every day grows very bad of the Plague. The Mortality Bill is come to 267; which is about ninety more than the last.—Home; calling at Somerset House, where all were packing up too."

"August 30th.—I went forth and walked towards Moorfields to see (God forgive my presumption) whether I could see any dead corpse going to the grave; but, as God would have it, did not. But Lord! how everybody looks, and discourses in the street of death, and nothing else, and few people going up and down, that the town is like a place distressed and forsaken."

"September 6th.—To London, and there I saw

*Daniel DeFoe (1659-1731) known to every schoolboy as the author of *Robinson Crusoe*, was only six years old at the time of the outbreak of the Plague. Even giving him credit for a vivid imagination, he must have been a precocious child to remember so much of the happenings of the sixth year of his life.

fires burning in the streets, through the whole city, by the Lord Mayor's order. Thence by water to the Duke of Albemarle's (at Whitehall): all the way fires on each side of the Thames; and strange to see in broad daylight, two or three burials upon the Bankside, one at the very heels of another; doubtless all of the Plague; and at least forty or fifty people going along with every one of them."

"January 19th.—It is a remarkable thing how infinitely naked all that end of the town, Covent Garden, is at this day, of people; while the city is again almost as full of people as ever it was."

John Evelyn's notes are:

"August 28th.—The contagion still increasing and growing now all about us, I sent my wife and whole family (two or three necessary servants excepted) to my brother's at Wotton, being resolved to stay at my house myself and to look after my charge, trusting in providence and goodness of God."

"September 7th.—I went all along the city and suburbs from Kent Street to St. James's, a dismal passage, and dangerous to see so many coffins exposed in the streets, how thin of people; the shops shut up, and all in mournful silence, as not knowing whose turn it might be next; there perishing nearly 10,000 poor creatures weekly. I sent to ye Duke of Albemarle for a Pest-ship, to wait on our infected men, who were not a few."

"October 11th.—Went through the whole city, when having occasion to alight in several places about business of money, I was environed with multitudes of poor pestiferous creatures, begging alms; the shops universally shut up, a dreadful prospect."

A condition that must not be overlooked is the famine pestilences that prevailed in England and doubtless in western Europe from the seventh to the beginning of the fourteenth century. The chief cause was the backward condition of agriculture whereby the food supply was sorely deficient. Not only was insufficient land cultivated, but the produce was of a poor quality. A poor harvest year along with unsatisfactory intercommunication greatly aggravated the almost intolerable conditions that prevailed. Undernourishment produced a low quality of physique, fruitful soil for consumption, scrofula, dysentery, "falling sickness," palsies, St. Vitus dance, jaundice, dropsies, and fluxes, boils, carbuncles, agues, bronchitis and putrid sore throat.

According to Newman, the disappearance of famine pestilence soon after the thirteenth century was due to extended and improved transportation. The first importation of grain into England was from Holland and Germany in the thirteenth century.

In a sense the effect of disease upon human history is similar to that of war. It cannot be estimated in either how much the world has lost in the early death of what might have been its most creative minds.

Like war, however, pestilential disease has not been without redeeming features; among the favorable results have been improvement in sanitation, hygiene and other factors that enter into preventive medicine; in modern war in particular, necessity has speeded up discoveries and methods that otherwise might have been indefinitely delayed. The wholesale carnage of war and of disease are the same. War and disease each acts as a check on population, yet so persistent is the will to live, that population in either case is sometimes restored within a generation. The species means more to nature than the individual.

"So careful of the type she seems,
So careless of the single life."

The power inherent in man, to come back after calamity or catastrophe transcends all reverses. "Many are the wonders of the world," wrote the ancient Greek poet,* "and none so wonderful as man. **** All fertile in resource, resourceless never meets he the morrow; only death he wants the skill to shun. But many a fell disease the healer's art hath foiled. So soaring far past hope, the wide inventiveness of man finds diverse issues good and ill."

The control of disease through the evolution of preventive medicine has also affected human history during the last one hundred years. It is clearly to be seen, that the elimination of such diseases as yellow fever, typhoid, smallpox and a number of other ailments has resulted in the advancement of the average span of human life so that at present it is over fifty-six years. True too, the advancement of the average age has been due in great measure to decrease in infant mortality. But all this is another story. Preventive medicine has resulted in the survival of thousands of men and women who have attained a vigorous age at a time of life when a century or more ago, such persons would have been considered aged and therefore inactive. Closely associated with the problem of vigorous old age is that of unemployment. With the mechanization of industry the race has been for the most part to younger men, thereby practically eliminating from industry many who have passed the half-century milestone. We are left, therefore, with a problem of adjustment which waits to be solved.

*Sophocles Antigone.

MICHIGAN'S DEPARTMENT OF HEALTH

C. C. SLEMONS, M.D., Dr.P.H., Commissioner

COMMUNICABLE DISEASES IN 1933

Although data concerning the number of deaths from communicable diseases is not yet available for the year 1933, the number of cases has been tabulated. All diseases show a decline, as compared with 1932, in the number of cases reported, with the exception of scarlet fever.

	1933	1932
Pneumonia	3982	4914
Tuberculosis	7001	7014
Typhoid Fever	437	522
Diphtheria	1143	1204
Whooping Cough	11668	12927
Scarlet Fever	16269	15104
Measles	21643	41505
Smallpox	46	216
Meningitis	84	132
Poliomyelitis	93	120
Syphilis	7667	11992
Gonorrhea	6429	6947

Although pneumonia is not reported at all completely, the number of cases reported in one year as compared to another does give some index as to the incidence. It would appear that pneumonia cases were somewhat less numerous in 1933.

The decrease in the number of cases of tuberculosis is too slight to be of significance. There has been a steady decline in the incidence as based upon the number of deaths. The case-finding campaign put on by the Michigan Tuberculosis Association, health departments and others, is resulting undoubtedly in the discovery of a large percentage of the existing cases.

Although efforts to find all typhoid fever cases were intensified during 1933, the number of cases located is actually less than for 1932.

Even though seven months of the year showed more cases of diphtheria reported than for the corresponding months of 1932, the year ended with a new low total. The decrease, however, is not great and it would appear that we must further intensify our efforts in immunization if we are to continue the rate of decline as heretofore.

The number of cases of whooping cough reported is somewhat less than in 1932 but is a little above the mean for the past five years. This disease is very poorly reported, many cases not having an attending physician and others having one at a time when diagnosis cannot be made.

Scarlet fever is the only disease to show

an increase over the previous year. There is some question as to how much of this increase is real. Efforts of full-time health departments in cities and counties have undoubtedly brought about the reporting of a higher percentage of cases. Nevertheless, it is evident that the incidence of the disease is not declining and may be increasing while the fatality rate is declining rather rapidly.

For the major part of the state, 1933 was not a "measles year." The number of cases is as high as it is because of the fact that this was Detroit's "measles year."

The low incidence of smallpox is remarkable and hard to understand. It is true that there has been a considerable amount of vaccination but certainly not enough to account for the almost complete absence of the disease.

There was a decrease of more than one-third in the number of cases of meningitis reported. The only form of meningitis that should be included in these figures is meningococcus meningitis. However, many reports do not specify the etiologic organism, and it is probable that other forms are included.

Poliomyelitis also shows a decline. In the outbreak year of 1931 there were 1,137 cases reported.

The decrease in the number of cases of syphilis reported is no doubt more apparent than real. A number of factors have contributed to the reporting of less cases.

A slight decrease in the number of cases of gonorrhea reported is not very significant and is also probably more apparent than real and is not a true index of the incidence.

C. D. B.

PHYSICIANS SHOULD CHECK THIS LIST
TO DETERMINE WHETHER OR NOT
THE LABORATORY THAT THEY ARE
USING IS REGISTERED, THERE-
FORE, CHECKED FOR DE-
PENDABILITY

The following laboratories are registered and approved by the Michigan Department of Health for the serum diagnosis of syphilis under Act No. 45, Public Acts of 1931 (An act to protect the public health; to provide for the registration and supervision of public laboratories making chemical, serological and/or bacteriological laboratory tests to aid in the diagnosis and/or control of communicable disease; and to prescribe penalties for violation thereof):

ACCREDITED REGISTERED LABORATORIES IN MICHIGAN DOING SERUM DIAGNOSIS OF SYPHILIS

Reg. No.	Laboratory	Location	Director
5	St. Joseph's Mercy Hospital	Ann Arbor	S. C. Howard, M.D.
161	Alway Private Hospital	Ann Arbor	G. G. Alway, M.D.
6	University of Michigan Hospital	Ann Arbor	R. L. Kahn, Sc.D.
9	Battle Creek Sanatorium	Battle Creek	Paul Roth, M.D.
11	L. Y. Post Montgomery Hospital	Battle Creek	A. A. Humphrey, M.D.
70	Nichols Memorial Hospital	Battle Creek	C. E. Roderick, M.D.
14	Mercy Hospital	Bay City	W. G. Gamble, M.D.
13	Health Department	Bay City	L. B. Harrison, B.A., M.A.
76	W. L. Brosius Laboratory	Detroit	W. L. Brosius, M.D.
140	Chas. Godwin Jennings Hospital	Detroit	S. W. Wallace, M.D.
18	Children's Hospital	Detroit	M. K. Patterson, M.D.
100	H. L. Clark Clinical	Detroit	H. L. Clark, M.D.
17	Delray General Hospital	Detroit	H. E. Cope, M.D.
1	Detroit Department of Health	Detroit	F. M. Meader, M.D.
113	Evan. Deaconess Hospital	Detroit	A. B. Pranian
136	Florence Crittenton Hospital	Detroit	A. L. Amolsch, M.D.
88	Dunbar Hospital	Detroit	R. I. Greenidge, M.D.
21	Grace Hospital	Detroit	C. I. Owen, M.D.
73	Harper Hospital	Detroit	P. F. Morse, M.D.
22	Henry Ford Hospital	Detroit	F. W. Hartman, M.D.
23	H. A. Meinke Laboratories	Detroit	Dorothy Wolf, B.A.
142	Medical Laboratory	Detroit	N. E. Aronstam, M.D.
24	National Pathological Laboratory	Detroit	F. J. Eakins, M.D.
25	Owen Clinical Laboratory	Detroit	R. G. Owens, M.D.
26	Physicians' Service Laboratory	Detroit	M. S. Tarpinian, B.S.
28	Receiving Hospital	Detroit	O. A. Brines, M.D.
31	St. Joseph's Mercy Hospital	Detroit	W. L. Brosius, M.D.
32	St. Mary's Hospital	Detroit	J. E. Davis, M.D.
139	G. H. Jordan Clinical	Detroit	G. H. Jordan
156	Fairview Sanatorium	Detroit	R. I. Greenidge, M.D.
157	Nottingham Clinical	Detroit	Harriet B. Ainslie, B.S.
162	F. G. Buesser Clinical	Detroit	F. G. Buesser, M.D.
164	Detroit Clinical	Detroit	I. J. Zimmerman, M.D.
117	Woman's Hospital	Detroit	M. A. Oginsky, M.D.
27	Providence Hospital	Detroit	J. E. Davis, M.D.
97	Eloise Hospital	Eloise	S. E. Gould, M.D.
36	Hurley Hospital	Flint	G. R. Backus, M.D.
167	Allergic & Clinical	Grand Rapids	H. G. Swenson, M.D.
38	Blodgett Memorial Hospital	Grand Rapids	W. M. German, M.D.
40	Brotherhood Private Laboratory	Grand Rapids	J. S. Brotherhood, M.D.
37	Butterworth Hospital	Grand Rapids	M. A. Miller, M.D.
41	St. Mary's Clinical	Grand Rapids	G. L. Bond, M.D.
42	Western Michigan Clinical	Grand Rapids	T. L. Hills, M.S., Ph.D.
2	Western Michigan Division (Mich. Department of Health)	Grand Rapids	C. C. Young, D.P.H.
116	Cottage Hospital	Grosse Pte.	P. F. Morse, M.D.
158	Nottingham Clinical	Grosse Pte. Park	Harriet B. Ainslie
94	Public Health Laboratory	Hamtramck	P. A. Klebba, M.D.
44	General Hospital	Highland Park	P. F. Morse, M.D.
3	Branch Laboratory (Mich. Department of Health)	Houghton	C. C. Young, D.P.H.
146	City Health Department	Jackson	Doris E. Wilson, B.S.
46	New Borgess Hospital	Kalamazoo	H. R. Prentice, M.D.
91	Bronson Methodist Hospital	Kalamazoo	N. W. Larkum, Ph.D.
163	N. W. Larkum Clinical	Lansing	N. B. McCullough, B.S., M.S.
165	McCullough-Robinson Laboratory	Lansing	L. C. Ludlum, M.D.
69	St. Lawrence Hospital	Lansing	R. W. McGeoch, M.D.
104	Mercy Hospital	Monroe	C. J. Golinoux, M.D.
141	Diagnostic Clinic	Monroe	S. J. Peltier, M.S.
51	Macomb County Laboratory	Mt. Clemens	A. A. Spoor, M.D.
54	Mercy Hospital	Muskegon	V. K. Volk, M.D.
57	Oakland Co. Health Dept.	Pontiac	A. Thompson, B.A.
56	Department of Public Health	Pontiac	E. A. Christian, M.D.
128	Pontiac State Hospital	Pontiac	C. B. Toms, M.D.
151	Newberry State Hospital	Newberry	Alice Gracy, M.D.
118	Pawating Hospital Clinical	Niles	H. S. Willis, M.D.
111	Wm. H. Maybury Sanatorium	Northville	F. T. Zieske, M.D.
83	Department of Health	Roseville	O. W. Lohr, M.D.
59	Central Laboratory	Saginaw	T. Y. Ho, M.D.
168	Hart Clinic	St. Johns	T. Y. Ho, M.D.
108	Clinton Memorial Hospital	St. Johns	R. P. Sheets, M.D.
62	Traverse City State Hospital	Traverse City	C. M. Crum, B.S.
63	Wyandotte General Hospital	Wyandotte	

CHILD HEALTH NURSING PROJECT

A Child Health Nursing project was started in Michigan on February first under a C. W. A. grant. This is a state project, administered in Michigan as in other states by the Health Department, working in close coöperation with the state relief authorities. It is an emergency program, to be completed in two months, and intended to improve child health with special reference to nutrition and also to relieve unemployment among nurses.

The type of program to be carried on in each county will depend upon local situa-

tions. Those counties having full-time health departments or public health nurses will use the nurses to supplement their staff in their regular program as it applies to children. In counties where there is no organized public health machinery, the general plan provides that the nurses concentrate their efforts on the promotion of measures to safeguard the nutrition of children, especially of those in families on relief. This will probably include home calls, instruction of the mother in low cost diets, arrangement with the family physician for the examination of special children and the cor-

rection of emergency defects, or the provision of supplementary feeding. Both pre-school and school children are to be considered in the program.

Registered graduate nurses from relief and reemployment lists are to be used in the project. The Michigan plan calls for 100 nurses and seven supervisors. The supervisors will be nurses with public health training or experience, and, so far as possible, the nurses chosen for county work will have had some public health training. However, because of the lack of unemployed public health nurses in the state, it will be necessary in many instances to hire nurses who have had no public health training.

While the project was designed primarily to improve the nutritional status of children, in communities that already are meeting the needs along this line, immunization work is advised, or any other phase of a general child health program that local conditions warrant.

A NATION-WIDE SURVEY TO DETERMINE DENTAL NEEDS

Authorized by the American Dental Association and with the coöperation of the U. S. Public Health Service, a nation-wide survey is under way to determine dental needs, especially among grade school children. By using uniform blanks, with uniform instructions, it is hoped to secure first hand facts in a more comprehensive and authoritative fashion than has been possible heretofore.

In most of the states, including Michigan, the survey is now under way. In this state it has the endorsement of the Michigan State Dental Society, the Michigan Department of Public Instruction, and the Michigan Department of Health. The Bureau of Mouth Hygiene of the latter department is organizing the survey. The examination blanks are furnished by the U. S. Public Health Service and the Service will tabulate the findings when the survey is completed. The Michigan Department of Health is furnishing a leaflet on children's teeth, and a notice card for a follow-up by the teacher where the survey is carried on.

The local dentists in every county are being asked to give the necessary time to make the survey as their part in this undertaking, and for the most part they are

showing a hearty response. They are not required to examine all the grade school children in the county but to make a selection of schools in such a way as to give an accurate cross section. However, in some counties the local dentists have taken up the project with so much enthusiasm that they expect to examine all of the children. This has been true in Branch, Mason and Manistee counties.

The examination must be completed by May 1, and it is hoped to have the data analyzed for a report before the American Dental Association meeting in St. Paul in August of this year.

W. R. D.

LOW BACK PAIN, WITH ESPECIAL REFERENCE TO ARTICULAR FACETS WITH PRESENTATION OF AN OPERATIVE PROCEDURE

Ralph K. Ghormley, Rochester, Minn., feels not only that are the facets the cause of sciatic pain, but that they may be the cause of lumbosacral pain with or without sciatic pain. Particularly those patients who complain of a sudden onset of pain low in the back, brought on by some activity, often trifling in its severity but usually involving a twisting or rotary strain of the lumbo-sacral region, are, in all probability, usually victims of the "facet syndrome." These patients often present sciatic scoliosis, which may be homolateral, contralateral or alternating. With the onset of sciatic scoliosis, muscle spasm sets in, and this, although splinting in action, forces the irritated surfaces of the facets together more firmly. Until this muscle spasm subsides or some change in the position of the surfaces of the facets takes place, as by manipulation, the pain may persist. Actual sciatic pain may or may not be present at once. It often appears later in the disorder to complete the facet syndrome. In those cases in which the roentgenogram reveals narrowing of the fifth lumbar intervertebral space, with consequent flattening of the disk, much abnormal strain must be thrown on these facets. It is obvious that, with narrowing of the disk, overriding of the surfaces of the facets must take place. With this abnormal contact, traumatic arthritis is likely to be set up, which in time must produce symptoms not only of lumbosacral pain but of sciatic pain as well. The sciatic pain in these cases seems more likely to be caused by pressure on the nerve or nerve sheath exerted by the facet than by the intervertebral disk. It is possible, too, that the surfaces or margins of the facets may be fractured by undue stress or strain. The mechanical strain placed on these surfaces when the spinal column is forcibly hyperextended must be great; such traumatic changes probably are present in many more instances than have been recognized heretofore. The author concludes that proof of these changes is in many instances difficult to secure, but much aid in establishing such a diagnosis will be derived from the use of oblique roentgenograms of the lumbosacral region. Before operative treatment is decided on, the surgeon must be certain of the joints to be stabilized or the result may be poor. The author describes a combined lumbosacral and sacroiliac fusion, which has proved much more satisfactory than any other type of operative procedure.—*Journal A. M. A.*

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EDITORIAL...

MARCH, 1934

A NEW ERA IN MEDICINE

In reviewing the work of the Michigan State Society Survey before the Secretaries Conference in Chicago the statement was made: "In 1931 the House of Delegates recognized that we were in a twilight zone between an era that was past and a new era whose dawn was still invisible." This year, 1934, we are partly able to see certain signs in the lights that are breaking on the horizon that induce one to conclude that the dawn is breaking on a new era whose potentialities are concerned largely with many political, and also undoubtedly with momentous social changes. These impelling changes will alter and in some respects wipe out some of the principles that have guided us in the past. There are bound to be changes in human relations.

These changes are becoming more and more evident. Much as we resent them, it may be impossible to prevent them; much as we decry public and government control, it is becoming more and more inevitable. The conditions which brought it on were not created overnight. They have been developing over a score of years in various movements till now they loom up so that he who is capable of discerning may note the social trend.

* * *

The expansion of our school systems created by public demand, now provide the refinements of education in art, music, radio, carpentry, mechanics, designing, athletics, gymnasium, cooking, clinics and what not, the cost of public health services, the care of the widow and child, the care of the aged, inspection of factories, conditions of work. Study these and all other social movements and one perceives in each a public desire and determination that government, federal, state and local, take over such obligations. Nor has the social concept been limited to these innovations. Steadily have we added to this structure until the crisis of the past three years has caused a broadening of the inclusions and in each instance society has turned to government for a solution. Today the banker has yielded to government control. Deposits are insured; interest is no longer paid on daily balances;

rules of banking operations have been formulated and dictated by federal and state government. The N. R. A. with its business codes governs business. The farmer has turned to government for aid and his work is regulated and a premium paid to him. Government has accepted the laborer as its ward and provides not only work but medical care for him and his family in addition. The stock broker, exchange and salesmen have been brought under government control and direction. Conditions under which they may transact business have been imposed and certain bonds and stocks are insured by the government.

* * *

The legal profession are officers of the court and subject to legislative and government control. In economic crises people turn to the government for a solution of their problems and expect it to assume their responsibilities. Personal obligations and trials have been surrendered to government, to which appeal for help has been made and heard. These facts indicate the social trend. Society, as we have said, now looks to government for solution and help.

* * *

Medical care is a social problem which remains unsolved; it has become a matter with which society concerns itself. As has been repeatedly stated, if the medical profession does not find a solution of the problem, society will turn to the government for a solution as it has done in business, banking, education, industry, finances and farming. Government, as we have said, has created standards, codes, conditions and regulations that have wiped out many long established customs and has brought about a new attitude whenever it has come to the relief of society.

Social influence is powerful. Will it eventually concern itself with the socialization of medicine? Will government assume all health responsibilities? In the new era, where will medicine stand? We are gravely concerned, for the answer will be that medicine may become society-government controlled. Society is recording influence and effects that none can deny; will they involve medicine? Medicine must recognize the new day, the new era, with its changed social relationship. It must accept leadership and bring about for itself that which government will prescribe if we fail to erect a pro-

gram of medical services demanded by society for the solution of its medical and health problems.

"It is for medicine to recognize a new day in social relationship and, rather than to be driven to new ideals of service, to accept leadership which should naturally flow to it because of the great men who dominate its work and its destiny. Rather, I would see medicine, which down through the centuries has been moved by outside forces and influences, assume a new leadership—not merely that of the laboratory or clinic, the bedside or the hospital, but a leadership in thought and ideal in those fields that secondarily affect medicine and by that leadership make medicine the protagonist of a new and great era, rather than the maid servant of those who, leading in other sociological fields, by secondary influence shape the destiny of medical practice."

These references are based upon an address delivered by the Hon. Joseph V. McKee before the New York Academy of Medicine and from which free quotations of thought as well as the above paragraph have been made. The handwriting of the new era may be seen upon the wall. Will organized medicine heed the warning and initiate such leadership or will an attitude of watchful waiting characterize our course till we find society taking over the helm?

The answer rests with the House of Delegates. The responsibility, the decision lies with each individual delegate. The administrative officers of organized medicine are restrained till organized medicine, through its delegates, have spoken the command to act promptly.

"The Hippocratic oath speaks of an ideal for the physician: 'I will look,' it says, 'upon him who shall have taught me this Art as one of my parents. I will share my substance with him and I will supply him necessities if he is in need. . . . The regime I adopt shall be for the benefit of my patients according to my ability and judgment and not for their hurt and for any wrong.'"

"This is the dedication, the consecration of the physician to the ideals of his profession. But more that is asked of him today. With these great sociological movements under way and even at fruition, it calls on him not merely to complain, not merely to disagree, not merely to debate, but to find a fuller and freer and a greater place for medicine, not only in the curing of human ills but in the great regime to make life better and happier and nobler—to bring to humankind some of the happiness on earth that the elect expect of heaven."

PROFESSIONAL PESSIMISM

There are many members of the medical profession who feel that their calling is misunderstood by the public and that it is not held in the high esteem to which it is entitled. This feeling, however, is not peculiar

to medicine. The lawyer shares it; we have heard him say so. Doubtless the clergyman, the *cure of souls*, feels that he is not respected to the degree his cloth should entitle him. The esteem in which professional groups are held depends largely upon the persons composing the groups and not the body of knowledge or practice that makes up the specialty. Medicine started out as a religion, during which period the respect and esteem it was held in amounted to veneration. The medicine man of the Indian or of the aboriginal tribes is a matter of awe to his clientele. He is a dispenser of mystery. The more scientific medicine becomes and the less a mystery, the less medicine will be accorded that veneration which is akin to worship. The personalities who make up any profession will always receive the respect to which they are entitled.

Of law, medicine or theology, medicine would seem to be the choice of the laity if the desire on the part of young men to enter it is any criterion. Medical schools of the United States have for many years a greater number of applicants for the study of medicine than can be accommodated. In so high a regard for some reason or other is medicine held that every year young men who cannot gain access to our own medical schools, go abroad to study and to graduate and look forward to returning to their native land to practice.

Then there is another side to it. We are apt to become impatient when we find proposed legislation, which seems to us important, so lightly regarded by lawmakers that it is either held up in committee or passed in such a distorted way as to render it futile. We must not forget that the actions of the public at large are apt to be destructive and almost never constructive. The average of mankind tends to pull down everything to its own level. In any department of human endeavor advancement or constructive effort is the work of outstanding and able personalities and almost never of the people at large. This seems to be a matter of crowd psychology. Viewing it in this way, the action of legislators in feeling that the chiropractor, osteopath and the naturopath, *et hoc genus omne*, should have a fair show along with the medical profession, can be readily explained. The unfortunate thing is the inability of supposedly intelligent persons to distinguish between

what is scientific (the chemistry, physics, and biology which go into the body of knowledge of medicine are in every sense scientific) and what is pseudo science.

TAXATION

According to statistics published in the United States News, in 1928 there were in this country 500 persons with incomes of a million dollars a year or over, and 43,000 persons whose incomes were fifty thousand a year. Four years later, there were only twenty-five persons with incomes of one million dollars or over and less than 8,000 persons whose annual incomes had reached fifty thousand dollars. It is also said that less than three per cent of the whole population of the United States has paid income tax into the Federal treasury. The figures for last year have not yet been published, but it is everywhere evident that individual wealth has shown a marked decrease.

Yet the demand for money has been at no time in the past as great as it is today, considering the extensive federal program of relief. With very few large incomes to tax, it is plain that increased taxes for thousands who have never felt such tax burdens before must needs be the order of the near future. That tax which is shared by all is the most scientific, the most just, if that term may be used to describe taxation. The sales tax is in many respects the fairest tax ever imposed, since it is impartial. One pays as he buys. In a democracy an income tax in which all the income of every person would be taxed, would be fair, for then one would pay as he earns; only those who had no income would be exempt. And property which yielded no income would not be subject to confiscation for taxation. After all, taxes paid on real estate and on personal property are paid out of income. Property, real or personal, is a dead thing when it is not earning. Everyone would be interested in civic, state and national economy if he shared the burden, and if he were not able by his democratic vote to shift it to a helpless minority. Such scheme of taxation, however, has never been popular with the office-seeking politician. With the elimination of large incomes, there will be no alternative but eventually to make taxation as democratic as the vote. This is not to be construed as an editorial plea for more taxation but such an apportionment of taxation

that will include an equable share to each earner who has a voting voice in federal, state and local government. Had such a custom prevailed during the past two decades, the resultant thrift would have fortified the nation to a large extent against the world depression that confronts us today.

GEORGE EDWIN McKEAN

The death of Dr. George E. McKean has removed one of the most prominent members of the medical profession of the state. His influence as a clinical teacher of medicine is wide owing to the large number of graduates of the Detroit College of Medicine and Surgery in active practice in this state and elsewhere, who have derived inspiration from his teaching. The influence of a great teacher makes for immortality. Dr. McKean was endowed with a personality that endeared him to everyone he met and made them feel they knew him well, even on very brief acquaintance. Initial introductions often ripened into friendship as the years passed. To those who knew him intimately he was a man of a happy disposition with a sustaining philosophy of life and an endless charity for the frailties of human kind. Always a kindly humanitarian,

"He scarce had need to doff his pride or slough the dross of earth—
Even as he trod that day to God so walked he from his birth,
In simpleness and gentleness and honor and clean mirth."

Such a physician was ever in demand. His presence in the sick room was as salutary as any medicine or method of treatment could be. He was a rational therapist. Any prescription, whether drug, rest or abstinence from medication, was the result of careful thought and diagnosis.

Dr. McKean had varied interests. He was not all work and no play. He enjoyed golf. He also enjoyed reading and had a high appreciation of the classic in literature. He had great satisfaction in his family; talking over the economic reverses of the recent past, common to all of us, he said there was one investment on which he had realized to the full—and that was his three sons, and what else mattered after all? His loss as a beloved physician and friend is irreparable, yet he lived such a life that, now that the end has come, the words about Mr.

Valiant-for-Truth seem singularly appropriate:

"My sword I give to him that shall succeed me in my pilgrimage, and my courage and skill to him that can get it. My marks and scars I carry with me, to be a witness for me, that I have fought the battles of Him who will now be my rewarder." When the day that he must go hence had come, many accompanied him to the riverside, into which as he went he said: 'Death, where is thy sting?' And as he went down deeper, he said: 'Grave, where is thy victory?' So he passed over, and all the trumpets sounded for him on the other side."

THE HOSPITAL*

The hospital in all stages of its development has been an instrument of incalculable value in the progress of medicine. At an early date, men realized that the collocation of the sick would advantage both patient and physician, and for centuries several types of institutions were available for this purpose. Among the first of these were the temples of Egypt, Greece and Rome, where patients gathered with the expectation of receiving divine aid, perhaps supplemented by that of priests or physicians. To the Greek medical schools likewise came many attracted by the fame of the teachers. Similarly, in the larger centers of Greek and Roman culture, the clinics or *ἰατρικαὶ* of the Greek physicians served as places of consultation. More important than any of these earlier institutions, however, was the hospital in which greater attention was directed to the physical comfort of patients, where incurable or dying patients were given solace, and where the poor were as welcome as the rich.

From its inception, the hospital was essentially a charitable institution, founded upon an altruism apparently inspired by religion. As early as the fifth century B. C., Buddhist homes for the sick and aged had been erected in Ceylon, and in the second century B. C., their number was augmented by King Duthagamani. The Hindu king Asoka (263-226 B. C.) likewise interested himself in the building of hospitals which he endowed not only for the care of sick and aged, but even for animals. Early Hindu records indicate the existence of asylums for the poor, and

*This article is a continuation of the historical editorials as announced, the subject of which is "The Evolution of Methods and Devices in the Development of Medical Science" in contradistinction to the story of personalities in the history of medicine. The hospital is here written up as an adjunct in the development of medical knowledge.

hospitals provided with physicians and nursing facilities in the first and fourth centuries A. D. In Japan, near Nara, a Buddhist hospital was founded in 758 A. D., and during the Sung dynasty (660-1278), hospitals were built in China.

The hospitals in Asia, although exemplifying a philanthropic spirit, are only indirectly related to the modern hospital, which is primarily of Christian origin. The early Christian sects bordering the Mediterranean, despite their official suppression, attempted to follow the old Jewish custom of hospitality by sheltering the stranger and the sick. During the epidemic of Carthage in 222 A. D., for instance, St. Cyprian and other Christians offered the use of their homes. When the persecution of Christians ceased, the secretive and desultory charities of individuals were supplanted by more extensive public welfare work—and the hospital. Buildings were constructed and physicians and attendants were employed in providing gratuitous service. The earliest hospitals and homes for the aged in Europe were established under Constantine the Great (303-337). More extensive was the hospital founded by St. Basil at Cæsarea in Cappadocia (369), an actual settlement consisting of pavilions for the sick, convalescent homes, and residences for physicians and attendants. Before the end of the fourth century, a three hundred bed hospital had been erected at Edessa. Between the fourth and sixth centuries, there were several hospitals in Constantinople, the most important being those of St. John of Chrysostom, St. Pulcheria, and St. Sampson. In Rome, Pope Symmachus (495-514) established three hospitals, and these were maintained by succeeding prelates and emperors. Early in the seventh century, hospitals had spread to Alexandria, Ephesus and France, and to pagan countries as well as Christian.

About this time, the Cistercian and Benedictine monasteries, adhering to the rule of St. Augustine, established infirmaries for the care of monastery inmates and strangers. Monasteries multiplied throughout Europe to reach their peak of development about the tenth century. Concomitantly, hospitals arose in association with the cathedrals, and one of these, the Hotel Dieu, is still in existence at Paris. Laymen were banded together in orders of chivalry, devoted to the building and maintenance of

hospitals and to caring for the sick. The Knights of St. John (later of Rhodes, then of Malta), most important among the Hospitaliers, were organized before the eleventh century; the Teutonic Order of Northern Europe arose during the twelfth century, as did the more local Order of the Holy Ghost in Montpellier. During the following century, women were organized as the Hospital Sisters of Mercy of Jesus and were pledged to attend the sick night and day.

By the end of the thirteenth century, there were great numbers of hospitals (perhaps as many as nineteen thousand) throughout Europe. Two factors were of great importance in this rapid multiplication of hospitals. The Crusades with their ensuing mobilization of great numbers of the population created an economic problem for the towns through which the Crusaders passed. The care of the pilgrims and soldiers was partly solved by the establishment of numerous hospitals. Furthermore, the prevalence of great epidemics of leprosy during the twelfth and thirteenth centuries, probably a consequence of the Crusades, required the isolation of affected persons, so that many of the hospitals were founded as leper houses. Most of the hospitals were small, their capacity limited to from ten to thirty beds, although some of the larger hospitals, such as the Ospitale Maggiore of Milan, had more than two thousand. The system of wards was the general rule.

Throughout the middle ages, the hospital was essentially a place of relief for the poor; service was given without charge, although wealthy patients were sometimes obliged to pay for their care. The patients obtained seclusion and nursing service, although very little in the way of medical treatment. The physicians and barber-surgeons who were employed were, on the whole, secondary factors in the hospital system, and very little in the way of hospital progress is evident in Europe before the Renaissance, beyond the idea of charity for the sick, the creation of places in which the sick could be gathered, and the organization of attendants for their care. The effect of Moslem hospital tradition and the establishment of medical schools were influences which made the hospital a more important factor to medicine.

Among the Arabians, the cultural descendants of the Greeks and Alexandrians,

the hospital became an effective medical institution. The medical tradition of the ancients had a powerful influence on the development of Arabian hospitals. In fact, the earliest large hospital was associated with the school of Jundishapur in Kurdistan, which was the center of Arabian medicine in the sixth century. With the later formulation of the Mohammedan religion and the expansion of the Moslem empire, hospitals were extensively increased both in number and size. Some of the later hospitals in Bagdad, Cairo, Syria and Moorish Spain became large and elaborately organized. In Cairo is the oldest existing Moslem hospital which was built by Sultan Quala'un (1279-90), a group of huge buildings associated with a school and mosque. To a great extent, the development of academic medicine in Islam was due to the combined influence of the medical schools, the study of Greek medical texts, and the accumulation of clinical material in the hospitals which, although founded by the ruling class, were usually managed by physicians.

As Græco-Arabic culture insinuated itself into Sicily and Spain, and later into Italy and other parts of Europe from the eleventh to the thirteenth centuries, the universities became centers of learning. Medical schools arose at Salerno, Montpellier, Paris, Bologna and elsewhere, and, with the influence of the schools, the European hospital acquired a new importance in the development of medicine. It became the site for clinical studies, and the place in which surgical operations were performed. It served along with the university theater and the charnel house as a location for the studies of the renaissance anatomists. In these respects, the hospital acquired a distinctly modern character.

From the fifteenth to the nineteenth century, the hospital continued both as a medical and a charitable center, although many influences during this interval affected its organization. Through mismanagement, the control of a number of hospitals passed from the church to the cities with an ensuing change in their financial status. The decimating plagues of the period caused undue strain on the institutions so that in many cases the hospitals themselves were centers of contagion. The Reformation precipitated a great upheaval in Catholic charities, seriously affecting the hospitals of

northern Europe. The growth of industry and the migration of people to the cities resulted in overcrowding of the hospitals and frequent neglect of patients. Although the trials of the hospital during this period were great, the principles of its foundation enabled it to survive. It was at this same time that the first hospitals were founded in Mexico, Canada, among the American colonies, and in Russia; likewise, many of the now famous British and continental hospitals were established. With the founding of hospitals in the American colonies, an innovation in hospital finance originated whereby all patients except the pauper classes were obliged to pay for service. So slowly was this method adopted in Europe that it was not until late in the nineteenth century that the pay system was first introduced into a number of English hospitals.

Although hospitals have acquired characteristics differing among themselves in various countries during the past hundred years, the advances in medical science, the discovery of antiseptics and anesthesia, the provision for clinical laboratories, and the formulation of principles of public hygiene have brought the hospitals to a status of uniformity and excellence which had been impossible previously. The introduction of training schools for nurses during the latter half of the nineteenth century provided intelligent and competent attendants. At its present stage of development, with its extensive laboratories, operating rooms, and clinical facilities, and its excellently organized provision for patients, the hospital has become the most important instrument yet available for the progress of clinical medicine.

W. T. D.

DR. CHARLES GODWIN JENNINGS
HONORED

February 28 and the Book-Cadillac Hotel were the time and place set apart by the medical profession of Detroit to do honor to one of their number who has served his generation long and honorably. It is fifty-five years since Dr. Jennings graduated in medicine and with the exception of time spent in post-graduate work and teaching and play he has been engaged in the active practice of his profession ever since. In 1931 the regents of the University of Michigan conferred upon Dr. Jennings the honorary degree of M.A. and the following year, the honorary degree of D.Sc. was conferred upon him by the College of the City of Detroit. Honorary degrees were never conferred with greater propriety. Both institutions in honoring Dr. Jennings honored themselves.

Born in the state of New York in 1857, Dr. Jennings obtained his early education in the schools of Seneca Falls, and in 1875 he graduated from Mynderse Academy preparatory to entering Cornell University. He began the study of medicine, however, in a preceptor's office at Seneca Falls, and in 1876 matriculated and entered upon the study of medicine at the Detroit College of Medicine, from which institution he graduated three years later. Dr. Jennings, however, has been a lifelong student. Even those days in which adult education was not as commonly undertaken as now, he took special courses in physics, chemistry, French, German and English literature with private tutors. Those of us who have attended Dr. Jennings' clinical lectures have been impressed by his thoroughness in preparation and his clarity in presentation of his subject. As a clinical teacher he ranks with the five or six outstanding clinicians of the United States of the past quarter of a century. His industry seems boundless as seen in a mere catalogue of his hospital appointments, which is an imposing one. Attending physician and chairman of the board of trustees and of the medical board of the Charles Godwin Jennings Hospital; consulting physician Harper Hospital (he was head of the department of Medicine and chairman of the Executive Committee of the Medical Board from 1912 to 1925); consulting physician to the Grosse Pointe Cottage Hospital, the Children's Free Hospital, Detroit Tuberculosis Sanitarium, the United States Marine Hospital, St. Mary's Hospital, 1882 to 1890, and attending physician to the Woman's Hospital from 1895 to 1900.

Dr. Jennings' teaching positions have been for the most part in the Detroit College of Medicine, where he lectured on chemistry from 1881 to 1882, chemistry and diseases of children, 1883 to 1888, physiology and diseases of children 1889 to 1893; he was professor of pediatrics from 1893 to 1895 when he combined pediatrics and medicine to 1910. He was professor of medicine from 1910 to 1918.

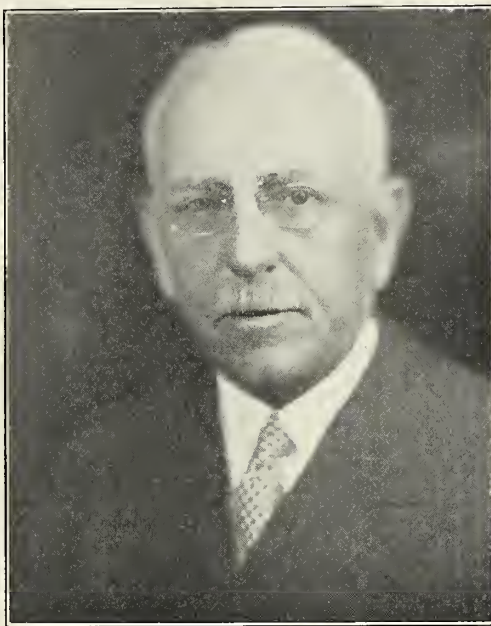
Perhaps no other physician in this state is so widely known throughout the nation in medical circles as Dr. Jennings. His professional society membership list, past and present, includes the following: Wayne County, Michigan State and American Medical Associations. He was president of the Wayne County Medical Society in 1903; chairman of the section on diseases of children A.M.A. 1893, and vice-chairman of the medical section in 1920; President of the Detroit Academy of Medicine, 1918; Master, American College of Physicians, chairman of the Board of Governors from 1927 to 1931, and in 1931 vice-president and regent. Dr. Jennings was president of the American Therapeutic Society in 1922 and president of the American Congress of Physicians in 1927.

During the war he was first lieutenant of the Medical Reserve Corps U. S. Army 1917 and captain of the medical corps U. S. Army 1917 to 1919. He was on duty at Camp Grant as chief cardiologist in 1917.

Dr. Jennings has been a voluminous writer on medical subjects. He has been editor at different times of at least three national periodicals, namely, associate editor of the *Annals of Clinical Medicine*, the *Archives of Pediatrics*, 1898 to 1912, and editor of the *Microscope*, 1885 to 1890. In addition to this he has been a contributor to the following works of composite authorship, Tice's Practice of Medicine, the Therapeutics of Internal Diseases, and, in 1889, the Cyclopedia of Diseases of Children, besides numerous medical papers and essays in national and state medical journals.

We have referred to Dr. Jennings' fondness for play as well as work. As an ardent fly fisherman he is well acquainted with the streams of Michigan

as well as the more remote regions of Canada where trout and salmon are found. Expert with the rifle as well as the shot-gun, he has hunted big game in the American and Canadian Rockies and in Newfoundland and New Brunswick. He has been a sailor and racing skipper from early life, having



DR. CHARLES GODWIN JENNINGS

cruised the Great Lakes and the Atlantic coast. At different times he was Commodore of the Country Club and the Inter-lake Yachting Association.

The committee on arrangements for the complimentary dinner at the Book-Cadillac were Dr. Douglas Donald, chairman, Dr. C. F. Brunk, Dr. M. H. Hoffman, Dr. Richard McKean, Dr. H. W. Plaggemeyer and Dr. J. M. Robb.

The guest speakers besides Dr. Jennings were Dr. Piersol of Philadelphia, Dr. A. W. Blain, president of the Wayne County Medical Society, Judge Murfin, and Harry M. Nimmo, editor of the *Detroit Saturday Night*.

DR. LUCE AND DR. SINAI RETURN

(An interview with Dr. Luce)

Dr. H. A. Luce and Dr. Nathan Sinai returned from their European voyage on February the ninth, having left Detroit on January third. They conducted an intensive investigation into Medical conditions as existing in England, France and Italy; intensive inasmuch as practically all their daylight time was devoted to the work. Travelling was done for the most part at night when sleeping was a matter of *wagon-lit*. The editor of the JOURNAL OF THE MICHIGAN STATE MEDICAL SOCIETY was accorded an interview with Dr. Luce, which interview, however, does not include any part of the report of the investigation which has been placed in the hands of the committee on Economics of the Michigan State Medical Society to be made public by order of the House of Delegates or by the Council of the Society.

Asked to detail his experience of a transatlantic voyage in January, Dr. Luce replied:

"I had about four days to set my house in order for the trip, which meant making the necessary contacts with the bank and obtaining my passport and

visé. The last act was most exciting. It meant using all the influence at my command in urging all speed upon the passport office at Washington. I left Detroit, January the 2nd, without the necessary document, looking to receive it at the office of the sub-treasurer in New York. I arrived in New York, obtained the desired passport, had the visé of the British Consul, got on board the transatlantic steamer at 11:45, just fifteen minutes before it was under steam for Plymouth, England. The capacity of the boat was 1,200, with only one-sixth that number on board. The ocean was fairly smooth so that the week on board was on the whole very agreeable. We arrived in Plymouth at 6 P.M. a week later and went straight to London. The hotel, Piccadilly, was cold, the most uncomfortable place, for winter at least, I ever saw. The only means of heating was the open fireplace, which was evidently on a vacation."

How did you find the English? Did you have any difficulty of approach or in getting the information you were after?

"Not at all. We found them very affable, thanks to letters of introduction we were fortunate in obtaining from Michigan physicians and from A. M. Smith and Mr. Gilmore of the *Detroit News*. Mr. Gilmore's letter introduced us to the manager of the North American newspaper alliance, who turned us over to Dr. Wilson, the Medical Advisor of that staid prototype of English Journalism, *The London Times*. Dr. Wilson invited us to his home to dinner and to spend the evening. We found him a very gracious host and a brilliant conversationalist. We discovered that he was at one time associated in general practice with the late Sir James McKenzie, who is noted on both sides of the Atlantic for his work in developing the specialty of cardiology. Dr. Wilson will be remembered by many physicians here as the author of the 'Beloved Physician,' which is a charming and sympathetic biography of Sir James McKenzie. We also met the son of Dr. Wilson, a physician connected with the so-called panel system. Dr. Wilson was profoundly impressed by our President Roosevelt, referring to him as one of the most remarkable men of the present age."

How, or in what manner, did you and Dr. Sinai conduct your investigation?

"To a large extent by personal interviews. We sought interviews with the so-called key men representing as many phases of medical opinion as possible on Health Insurance and kindred subjects, including the panel system. We wrote up these interviews and submitted our typed copy for the revision of the person interviewed. This seemed the best method of obtaining first hand as well as accurate information."

Did you confine your study to Medical conditions as they obtained in London?

"No. London was our base of operations, if it may be so called. We made trips to the manufacturing cities of the Midlands, such as Manchester and Birmingham, where we sought as much diversified information as was obtainable. I might add that almost everywhere in England, as well as in Paris, the officials in charge of organized medicine such as our County Medical Societies, were men who in this country we would call middle aged. In Paris, the physician in charge of the International medical organization was over seventy years old and as active physically as most men half that age. He was not only able to supply us with the data we sought, but showed an unusual degree of intelligence with the social and economic condition of medicine here in America."

Your itinerary included also Italy?

"Yes, we spent twenty-four hours in Rome and some time at Florence."

I presume you can tell quite a lot about Rome after such a sojourn?

"This, at any rate: it is the cleanest city I ever saw, not a speck of dirt or refuse anywhere."

Had you any difficulty in making yourself understood in France and in Rome?

"No. There were interpreters whose command of the English language was next to perfect."

Travelling at night and working by day had you any opportunity to look into the many interesting things those old European cities have for tourists?

"No, we were not tourists. We confined our time entirely to the object of our mission. Sightseeing is a matter for the future for me if good fortune makes it possible."

How did you find travelling and hotel accommodations as compared with the same in this country?

"Travelling by night in the sleeper was very comfortable and time saving. Day travel is not so comfortable as on the trains in the United States. I have already spoken of hotel accommodation. Though later we obtained well heated hotels and the food was good as well as abundant. In Italy, under Mussolini's influence water has largely replaced wine for table use. His object, it is said, is to produce a strong virile people, which he thinks is not possible through the enervating effects of wine. In England the pound sterling was worth about five dollars. The reduction of the gold content of the dollar caused us considerable financial distress."

What was your reaction to your being sent?

"My reaction was one of most profound appreciation of the actions of the Medical Economics Committee and the Executive Council. To merit the confidence of the medical profession of Michigan means more to me than any honor that could at this time or any future period be conferred upon me."

THE MAN MUST ALWAYS COME FIRST

(*New York State Journal of Medicine*)

When we analyze the instinctive feeling that surges up in every doctor's heart in opposition to state medicine, we can find pretty generally that he resents it because it is an attempt to put the institution above the man. Medicine is preëminently a calling where the man must always come first.

In a way, of course, this is true of all callings, true of all real progress. "The problems of the future will grow out of the present tendency to substitute the institution for the man," said a teacher in Alabama who had worked 20 years for a power company and then decided to go back to his old profession. "I have examined some 15 to 18 of the outstanding experiments throughout the world," he added, "attempts to substitute the institution for the man, and I can defend with success on any platform in America the thesis that in every case civilization has continued to grow only so long as the institution has been subordinated to the man. Our problem then is to return to that fine individualism in which man is paramount to the institution."

The relation between doctor and patient is one that can be institutionalized, it is true, but only to bring it down to a lower plane, only to rob it of its best qualities. There is no disputing the fact, of course, that we are living in a machine age and that a thousand things formerly made by hand are now turned out better by machinery. We even hear of churches with radio loud-speakers in the pulpit. But we have yet to hear of a dying church member who wanted a radio apparatus to hold his hand or a mother who wished her baby baptized by a gramophone. In life's critical and vital hours we want the human touch. When illness strikes down the father or mother or threatens the life of a little

child, the family physician is the one who is wanted. Medical skill is needed, but something more is demanded too—the man behind the skill. It is just that impalpable something that cannot be supplied by any state institution or system. With it we have the splendid service that has made the old family doctor the hero of song and story. Without it we have a machine-made system with all the efficiency of a Ford factory, perhaps, but lacking the human touch, the warm heart-beat, the sympathy that fills the patient with a new vigor and “doeth good like medicine.” Not long ago we were all “steamed up” over the perils of technocracy, the domination of the machine. Let us not have any technocracy in medicine. Keep the man first, where he belongs.

ANORECTAL PAIN

(Dr. L. J. Hirschmann, Detroit)

Anorectal pain and its clinical significance is the subject of a paper by Dr. L. J. Hirschmann which appeared in the *Journal of the American Medical Association*, February 3, 1934, in which Dr. Hirschmann points out that pain characterized by sudden onset in the anorectal region points to trauma. Overstretching of the sphincter muscle as a result of the forcible expulsion of hard, impacted or scybalaous stools is one of the most frequent causes of acute anal pain. Trauma is also caused by small swallowed foreign bodies being lodged in the anal crypts. An individual who has become constipated or who has ingested certain indigestible or insoluble substances, may suffer acute, even excruciating pain from the expulsion of stools containing these substances. Anal fissure presents sphincter spasm as its most frequent symptom. Occasionally a fissure or splitting of the lining membrane of the anal canal will be caused by sudden and unexpected body movement such as is produced by sneezing, coughing or undue muscular effort during bodily exercise or labor. Ulceration of the anal canal as well as of the anal crypts frequently is superimposed on the wounds caused by trauma. The frequent and erratic fluid movements resulting from hypercatharsis so weaken the mucous membrane and transitional lining of the anal canal as to render them more liable to ulceration and fissure than when put to any unusual strain. Anorectal pain of a more gradual onset or occasionally supervening on sudden acute pain may be caused by any congestive, inflammatory, ulcerative or infective condition. Pain of a dull steady character, aggravated by the passage of stools and persisting after defecation, is often produced by the presence of internal hemorrhoids. If the patient complains of pain that seems to increase in intensity and is accompanied by a pulsating or throbbing sensation with increasing difficulty in defecation, suppuration must always be borne in mind. Anorectal abscesses usually originate in infected crypts or from infected peri-anal hematomas. It must be borne in mind that anorectal pain may be indicative of pathologic changes in other organs contiguous to or impinging on the rectum or anal canal. In the male, a posterior urethritis, prostatitis or seminal vesiculitis may all manifest themselves by pain referred to the terminal end of the intestine. Prostatic abscess is frequently prone to make its presence known first during defecation. Vesical calculus and various types of cystitis may also cause rectal pain. Injuries or diseases of the coccyx or sacrum also manifest themselves by pain in this region. In the female, disease conditions of the fallopian tubes and ovaries will not infrequently give rise to rectal pain in addition to other symptoms, and an enlarged and adherent uterine fundus will

give rise to pain during the passage of stools. Any pelvic or uterine inflammatory condition will give rise to these symptoms, and a hypertrophied cervix not infrequently will cause pain by pressing the rectum against the sacrum, causing a definite obstruction to the fecal flow. The pouching produced by rectocele is also productive of pain. Any condition characterized by frequent fluid stools is productive of pain of a burning character. Itching or pruritus ani may be produced by any of these causes and in addition may be produced by any local infection, irritation or traumatization of the peri-anal integument. Obstruction, bleeding, discharge and even a loss of weight may be noted before appreciable pain is experienced when a malignant condition occurs in the rectal ampulla. The administration of enemas as hot as can be borne, but not under any circumstances containing soapsuds, affords great relief. The enema should be administered through a soft rubber catheter. One of the best remedies to produce local anesthesia of inflamed or eroded surfaces is ethyl aminobenzoate. For prolonged anesthesia for the relief of pain, particularly that produced by an anal fissure or ulcer of the anal canal, the subcutaneous injection of a 2 to 5 per cent solution of quinine-urea hydrochloride is recommended. Anorectal pain calling attention to the parts early, as it usually does, is a mandate to the physician to make a complete examination, not only of the anus and rectum but of all the surrounding contiguous organs, in order to discover the cause of the pain.

A GUID SQUARE MEAL

There's vitamins from A tae G that's talked aboot
th' noo,
Wha's guid for a' th' things that mak's yer heid
tae reel,
There's juices o' th' oranges an' sauerkraut tae
chew,
Bit naethin' much is said aboot a guid square meal.

There's women folk a plenty wha read th' diet list,
An' weigh themselves afore they eat an' afterwards
as well,
Bit wi' them a' ah'd like tae smile, an' tell them
wi' a jest,
Tae learn tae chew an' fletcherize a guid square
meal.

There's proteins an' th' starches an' there's calories
tae coont,
There's yeast ferment an' acid an' liver frae th' seal,
Bit let me hae ma porridge, in nae sae sma' amount,
For a verra nice beginning o' a guid square meal.

This vitamin efficiency is maistly applesauce,
An' nae sae verra fillin', bit mak's oor tummy feel
That on a winter nicht like this we'd gi' it a' a toss
For a soup tae nuts edition o' a guid square meal.
Guid Nicht WEELUM.

SLEEP

“Now blessings light on him that first invented this same sleep! It covers a man all over, thoughts and all, like a cloak; it is meat for the hungry, drink for the thirsty, heat for the cold, and cold for the hot. It is the current coin that purchases all the pleasures of the world cheap, and the balance that sets the king and the shepherd, the fool and the wise man, even. There is only one thing, which somebody once put into my head, that I dislike in sleep: it is, that it resembles death; there is very little difference between a man in his first sleep, and a man in his last sleep.”—CERVANTES.

THE WAYNE UNIVERSITY SCHOOL OF MEDICINE

ANDREW P. BIDDLE, M.D., Sc.D. (Hon.)
DETROIT, MICHIGAN

In August, 1933, the College of Liberal Arts, the College of Education, the Detroit College of Medicine and Surgery, the College of Pharmacy, the Department of Engineering, all conducted by the Board of Education of the City of Detroit, were adopted as a University organization and in January, 1934, the organization was formally given the name of the WAYNE UNIVERSITY. The City Law School, because of certain technical reasons, is not yet a part of the University.

I have thought that, because of the influence of the Medical School in the raising of the Colleges to the status of a University and thus its influence on the medical profession of the State of Michigan—for the larger part of its graduates enter practice in this State—it might interest your readers to know something of the structure of these several colleges, their growth and the significance of the choice of the name of WAYNE UNIVERSITY.

Ever since the creation of the small Board of Education in 1917—perhaps before—there has been an effort to give the youth of Detroit the opportunity—to which it is entitled—of enjoying the benefits of a higher education and with this a cultural background.

The College of the City of Detroit, now the College of Liberal Arts, had its origin in the Detroit Junior College, which was organized under the act of the Michigan State Legislature in 1917. In 1923 an act was passed enabling the Board of Education to extend the two-year curriculum to one covering four years of college work and leading to the degree of Bachelor of Arts or Bachelor of Science and furnishing also the required pre-professional work of students intending to pursue courses in medicine, law, dentistry, business administration, or education, and the basic courses for the College of Pharmacy and for the Department of Engineering.

The Detroit Teachers College, now the College of Education, is the outgrowth of the City Normal School, which began in 1881 as a small training school, gradually extending its facilities and usefulness. By an act of the State Legislature in 1919 the State Board of Education was empowered to grant life certificates to the graduates of the Detroit Normal School. By an act in 1921 the School became the Detroit Teachers College, offering a four-year course leading to the degree of Bachelor of Science in Education. Admittance in 1924 to the Northern Central Association of Schools and Colleges placed the College among the accredited teacher-training institutions of the country.

The Detroit College of Medicine and Surgery has the distinction of being the only School of Medicine in the United States which is conducted by the Board of Education of a municipality.

The Medical School under one name or another has of itself or through a merger been in existence since 1868. In 1913 the College, previously known as the Detroit College of Medicine, was reorganized under a new charter as the Detroit College of Medicine and Surgery and was conducted by a Board of Trustees selected for the purpose until July, 1918, when it passed under the control and administration of the Board of Education.

Because of the importance of Detroit as a world center of drug industry—recognized as such long before the advent of the automobile—the College of Pharmacy was organized in 1924 and requires for admission and continuance in study the high standards of the other colleges.

For several years, because of the facilities for higher education which the Colleges offered and the increasing number of students, it was felt that the giving of a University status would increase their usefulness, raise the pride and esprit de corps of the student-body, both in its scholastic and athletic fields, and by the more intimate association of the members of the several Colleges form a means of acquaintance the one with the other, an acquaintance so valuable in after life to the alumnus in his civic and professional relationship, and form in the course of years the cultural background so enjoyable.

The number of students enrolled as "fulltime" as of December, 1933, is as follows:

College of Liberal Arts.....	2,208
College of Engineering	290
College of Education	584
College of Medicine and Surgery.....	393
College of Pharmacy.....	80
City Law School.....	155
	<hr/> 3,710

Others form the "part-time" membership.

The next problem was the choice of a name, which was debated over a number of months. It was neither practical nor desirable to adopt a name which would conflict with those of the existing Universities. Yet it must be a name which would reflect the dignity of the institution, carry weight among the alumni and student-body, and at the same time be representative of the locality in which it was organized. The name of Wayne, after General Anthony Wayne, was adopted. The name connotes history. Perhaps not the history of public education, but a history which had a profound influence on the development of the Western Territory.

General Anthony Wayne, an outstanding personality of the American Revolution and the final winner of the Western Territory of which Michigan and Detroit are now a part, was born at East town, Chester Co., Pa., on January 1, 1745; in his younger years was a surveyor and in 1774 was elected to the Colonial Legislature of Pennsylvania. He took part in the unfortunate expedition for the capture of Quebec, and was wounded at Trois Rivières. For nine months he held Fort Ticonderoga against expected attacks, when he was relieved to join General Washington's Army in the South; played an important part in the conflicts about Philadelphia and spent the winter of 1777 with General Washington at Valley Forge. Later he was sent south to cooperate with General Nathaniel Greene and to harry the British retreat toward the Yorktown Peninsula, where Cornwallis was forced to surrender.

Later, when the attacks on the Western Indians had failed, he was given the heavy task of winning the West. On August 20, 1794, he utterly routed the Indians with their British Allies at the Battle of Fallen Timbers at the Rapids and Ford of the Maumee near Toledo, and put an end to Indian depredations for a long time. The territory was won. When Detroit was to be surrendered under the Jay Treaty, July 17, 1796, General Wayne chose Col. John Francis Hamtramck to receive the surrender and he in turn delegated the honor to Capt. Moses Porter—names familiar to Detroiters.

Truly the services of General Anthony Wayne to Detroit and the surrounding region entitled him to every honor the Board of Education and the City can bestow.

The Wayne University College of Medicine has an enviable record. Its teachers throughout the 65 years of its life have been men of ability, definitely recognized as professional and civic leaders of the state and nation; its alumni, practitioners of note, always striving to elevate the standard of educa-

tion and the practice of medicine. May the School, now enrolled among the publicly supported universities, follow its traditions, give due recognition to its graduates through the years and "carry on," always remembering that those who pass through its portals are among those upon whom rests the future of Medicine.

CORRESPONDENCE

Dear Doctor Dempster:

We wish to thank you for your comment on our recent editorial, "The Malpractice Bugaboo," in a recent number of *THE JOURNAL*; also for your liberal quotations therefrom.

We believe this to be one of the greatest of the economic problems now before the profession and it is no little satisfaction that we note the frequency with which the subject is discussed in the medical press.

Malpractice suits *are* on the increase, especially in the larger industrial centers such as the Calumet region; we find they are becoming all too common and that in most instances a member or members of the local profession are to blame; only recently the attorney for one of the larger commercial companies told me that one man was responsible for at least *three* suits!

We shall continue to harp on the subject as we believe it to be a live issue.

Very truly,

E. M. SHANKLIN, M.D.,
*Editor, Journal of the Indiana
State Medical Association.*

Port Huron Hospital.
Port Huron, Mich.

Dr. Theo. Heavenrich*
2007 Military St.

Port Huron, Mich.

Dear Dr. Heavenrich:

Your resignation as Chairman of the Medical Staff and consequent retirement from the Board of Directors of the Hospital Association comes as a distinct loss, not only to us who have been associated with you for so long, but in abstract degree to every man, woman and child in Port Huron.

With unsparing effort you gave of your time, skill and substance; for thirty-three years you have welded your life into the constructive welfare of the association that was closest to your heart, and now indeed we shall sorely miss your leadership, coöperation and genial presence.

Patients, nurses and hospital staff feel most keenly your departure. They too will miss your kindly smile and bracing encouragement and we

*Dr. Heavenrich is Councillor for the Seventh district.

are indeed glad in the thought that your resignation does not take you away from the community in which you have practiced for so many years.

Time has not yet permitted you to witness the final consummation of your constant and unselfish work towards providing Port Huron with its new hospital now under construction, but we feel that we can do no less than record our assurance that the completed institution will be as close to your ideals of modern hospitalization as is humanly possible to make it; inevitably, too, it will inspire an awakened public conscience of man's duty and humanity to man.

Dr. Heavenrich, the time is opportune to thank you most sincerely for your untiring zeal, and, in the same breath, to congratulate ourselves and our community on the good fortune which permitted us to have in our midst a man of your attainments to foster unceasingly so worthy a cause.

As you step out of the immediate circle of your activities in an institution in which you have served so capably and in so many capacities during the years gone by, our thoughts and good wishes go with you, yet we believe we do but echo your own wish when we say that we still hope to have the benefit of your counsel and advice from time to time.

That the ties of affection and regard which we hold for you may bind us still closer in the name of humanity and the Great Physician, is the cherished wish of

O. B. MUELLER,
President of Hospital Board.

OVERWORKED DOCTORS

To the Editor:

A peculiar condition exists quite generally in the medical profession in these days of unemployment.

While idleness prevails and work has been scarce, doctors as a rule are quite busy. In fact some of them are suffering from overwork rather than unemployment. Their overwork, however, consists, not so much in caring for the sick, who seem to be no more numerous than ever, but their time is more or less occupied in an effort to collect enough money for the work they do to keep the big bad wolf from their door.

When the time comes that a doctor spends as much effort and time in looking after his collections as he does looking after the sick, then we believe it is time some new system for the payment of doctors should be devised.

One of the starting points in reducing the effort of collections is to get patients' correct names and addresses, where they work, if at all, last place of employment, former doctors, number in the family, and who pays the bills. It has been said that a new account properly opened is half collected. The habitual use of the credit rating bureau, in all new cases, is worth all the trouble and expense it takes.

The quality of service rendered by the doctor to his patient depends somewhat on the doctor's peace of mind and whether or not he carries financial worries.

The public health would be directly benefited if doctors generally could devote all their time to the care of the sick, reading, and professional improvement, instead of having to devote so much time and energy to get their pay for what they do. Selah?

—H. B. K.

Battle Creek, February 20, 1934.

SOCIETY ACTIVITY

PREVENTIVE MEDICINE FROM THE FAMILY PHYSICIAN

In the February issue of this JOURNAL, your Committee discussed the need of preparing the rank and file of the medical profession to participate in a group plan of preventive medical service under the sponsorship of the organized medical societies. He indicated that the physician should be prepared both with regard to the mechanics of the plan itself and with respect to the technique of the services to be rendered. Now we will proceed to discuss the preparation of the public so that the latter may recognize the benefits at their disposal at the hands of the family physician.

The task is not a difficult one and it may be executed in various ways. A little local ingenuity so as to utilize available resources will go far to provide a solution. The essence of the job is to bring about a contact between the child and his parent on one side and the prepared and qualified physician who is ready to provide preventive medical services in his own office.

In our communication in the January issue, we called your attention to the need of a properly organized full-time local health department for every county or district in the state of Michigan. We suggested that this should be the first step in the furtherance of a program looking toward the transfer of preventive medical services to the physician in his own office. The local health department should serve as the executive department for the county medical society in carrying out such projects. It should be responsible for the general dissemination of health knowledge so that each parent will be stimulated to seek diphtheria protection, smallpox vaccination, a periodic health examination, etc., from the family physician.

Generally speaking, there are two methods of proceeding with the program of health instruction. The first we choose to term "popular health instruction" and it includes all the general methods employed in modern advertising through either the spoken or written word. Newspaper articles, special stories, billboard advertising, street-car placards, radio talks, including radio

dramas, notices to school children and many other similar channels have been used effectively for the dissemination of knowledge in preventive medicine. In at least one city, advertising space has been purchased in the local newspapers and a list of all the co-operating physicians has been published, together with their addresses and the hours at which preventive services could be obtained. Usually, the physicians through the local medical society have agreed upon a definite charge for the service, providing of course that the child be brought to the doctor's office at the designated time. Popular health instruction of the type above described is broadcast to all who dwell within the community. It must be planned with this in view. In a city like Detroit such health propaganda is directed at a million and a half people. It serves to stimulate a public consciousness in the health problems of the municipality but is not as productive in results as the second type of health education which we have termed "individual health instruction." It is here that the local health department can be of material assistance. Every well planned and equipped health service should employ one or more properly instructed and well trained public health nurses who become the most potent educational influence in matters of health. If there be no such nursing personnel, it is conceivable that substitutes might be provided for certain features of the educational program by securing the aid of parent teachers associations, school teachers or other groups. The most effective service, however, is that which employs properly and adequately supervised nurses who have a keen appreciation of the type of relationship which should exist between the family physician and his patient. At the present time, in some cities, CWA funds have been available with which to employ such nurses. In St. Louis, Missouri, the Health Department, in December, was assigned 100 nurses and in Charleston, South Carolina, 30 nurses have been secured. This personnel is being used in making a house-to-house canvass to establish a census which will indicate where the unprotected children reside. The nurse then endeavors to convince the parent that such children should be taken to the family physician and protected against diphtheria or vaccinated for smallpox.

Experience in many cities has shown that when more than 60 per cent of children of school age and 40 per cent of the preschool children have been protected against diphtheria, this disease tends to die out very rapidly, providing of course that this degree of protection is reasonably well spread over the entire community. In those municipalities when such reasonable percentages of children from six months to ten years of age have been protected, the problem resolves itself into an effort to reach the parent of each infant as the latter attains the age of six months. As 70 per cent of all diphtheria deaths occur among children below the school age, it is desirable to protect the infant before he is one year old. This, naturally, changes the numerical extent of the task. In Detroit, for example, instead of being directed at the entire population, it is only necessary to reach annually the mothers of 25,000 infants as the latter reach the age of six months. The nursing service is, therefore, directly concerned in reaching this relatively small group of parents.

A letter can be sent to the parent by the health officer followed, within a week or ten days, by a visit from the public health nurse who diplomatically endeavors to convince the mother that the child should now be protected against diphtheria. Of course all such parents should be referred to the family physician but if there is no physician of choice, a list of physicians in the neighborhood who are participating in the plan can be produced by the nurse and the mother can do her own choosing. Where this type of health education has been employed it has been possible to secure the protection of as many as 70 per cent of infants reached by the nursing service, and this protection has been secured for the child during the last part of his first year of life. That is when he needs it most.

Your Committee intends to continue these discussions on professional participation in public health work. Reprints of these articles can be secured from the Secretary of the Society, who will also make all necessary arrangements for speakers to appear at meetings of the county medical societies. Your inquiries are especially solicited.

COMMITTEE ON PREVENTIVE MEDICINE
MICHIGAN STATE MEDICAL SOCIETY

MONTH'S COMMENT

One month remains in which to pay your annual dues to your county secretary. Members in arrears April first will be placed on the suspended list and they will also be without defense protection during their period of suspension.

Society activity extends beyond its scientific program. In these days of momentous events the profession's economic interests demand consideration and action. Very often the business part of the program is rushed through, and even suspended in order to permit the presentation of the scientific discussion. This should not be done. Today your business and economic problems are as equally important as your scientific program. Do not neglect or postpone them.

Section officers have completed their programs for the Battle Creek annual meetings. A most attractive program has been prepared and will be announced in due course.

The program for the Annual Conference of County Secretaries is published in this issue. Members are welcome to attend the session.

Dr. W. E. Ward has been in practice for fifty years and has been secretary of the Shiawassee County Medical Society for twenty-five years. On January 20 Dr. Ward sent in his membership report which covered 100 per cent paid dues for 1934. A splendid showing and the third county society reporting 100 per cent payment for 1934.

Dr. E. M. Highfield was for many years secretary of the Gratiot-Isabelle-Clare County Society. Ever faithful in the discharge of his secretarial duties he went far toward maintaining society interest. His sudden death in January created a loss that we sincerely mourn.

At the Annual Meeting President Le Fevre commented upon therapy and the prescribing of high priced drugs when standard U. S. P. and N. F. drugs should be prescribed at lesser cost and the same therapeutic effect. The House of Delegates authorized the appointment of a special committee to prepare and publish educational articles on drugs. President Le Fevre announced the appointment of the following committee: Drs. Louis Le Fevre, E. E. Poos and M. S. Shaw. These articles will appear in early issues of the JOURNAL.

Dr. H. A. Luce and Nathan Sinai returned from England the second week in

February. Their report will be considered by the Committee on Economics and will be presented to the House of Delegates in due course.

SURVEY COMMITTEE'S REPORT

While they last—a copy of this valuable and informative report may be secured by sending \$1.25 to the State Secretary. Every member should secure a copy of this report in order that he may familiarize himself with these important facts related to Michigan. There are a few copies left—\$1.25 brings this 150,000 word report containing many tables and graphs. Send today.

1934 INVESTMENTS

A TIP: The best yielding and most productive investment for every member is his 1934 county and state society dues. Deposit the principle with your County Secretary today. The dividends that you will receive during the year will equal any other investment you may make.

MICHIGAN STATE MEDICAL SOCIETY ANNUAL CONFERENCE OF COUNTY SECRETARIES

UNDER AUSPICES OF THE COUNCIL AT
UNIVERSITY HOSPITAL
ANN ARBOR, WEDNESDAY, MARCH 7, 1934

Morning Medical Clinic

- 9:00 A. M. Neurological Clinic. C. D. Camp, M.D.
9:45 A. M. Recent Developments in Immunology. Dr. Kahn
10:30 A. M. Traumatic Surgery. Carl Badgley, M.D.
11:15 A. M. Medical Clinic—Therapy in the Anemias. C. C. Sturgis, M.D.
Therapy Limitations in Hypertension. Charles Brown, M.D.
Doctor Collier and associates welcome you to the Surgical Department.
12:30 P. M. Luncheon—University Hospital.

Afternoon Conference

- 1:30 P. M. Our Preventive Medicine Program. L. O. Geib, M.D.
Henry Vaughn, M.D.
2:15 P. M. Legislation. J. B. Bradley, M.D.
2:45 P. M. The County Society Program in the Care of Indigents. Louis Le Fevre, M.D., Muskegon
3:15 P. M. Progress and Planning in Post Graduate Education. J. D. Bruce, M.D.
3:45 P. M. Round Table Discussion and Questions.
6:00 P. M. Dinner—Michigan Union.

- (a) Medical Problems and Policies
Ten Minute Discussion by Past Presidents:

J. B. Jackson
H. E. Randall
Carl F. Moll
J. Milton Robb

- (b) President Le Fevre
President-Elect Smith
Council Chairman B. R. Corbus

Every county secretary is expected to attend this conference. It is their official duty to do so. County presidents are also invited and urged to attend.

COUNTY SOCIETIES

GOGEBIC COUNTY

The regular monthly meeting of the Gogebic County Medical Society was held January 16, 1934, at the home of Dr. Frank L. S. Reynolds, Grand View Hospital.

The meeting was called to order by the president, Dr. F. G. H. Maloney, at 9:00 P. M. The regular order of business followed, most of the various committees reporting.

Dr. R. I. C. Prout opened the medical program with the subject, "Focal Infection as a Cause of Disease"; Dr. T. R. Rees, "Tonsils as a Source of Focal Infection"; Dr. M. A. Gertz, "Prostate as a Source of Focal Infection"; Dr. R. E. Mullen, "Teeth as a Source of Focal Infection." Dr. Mullen showed some interesting lantern slides of the various conditions of teeth and jaws. The papers were twenty minutes in length. These subjects brought out some very lively discussions. Some of the men maintained focal infection as of little importance in causing diseases.

This was one of the best meetings in point of attendance and discussion that the Society has had in a long time. Twenty-two men were present. After the adjournment of the meeting, a luncheon was served.

FRANK L. S. REYNOLDS, M.D., *Secretary*.

GRAND TRAVERSE-LEELANAU COUNTY

The annual meeting of the Grand Traverse-Leelanau County Medical Society was held at the Park Place Hotel, Traverse City, on December 5, 1933.

The meeting was preceded by a steak dinner, the membership being the guests of our retiring president, Dr. T. W. Thompson.

Dr. H. B. Kyselka, as chairman of the Medical Advisory Welfare Committee, thoroughly reviewed the work and progress made by his committee in arriving at an understanding with the director of our County Emergency Welfare Relief Commission.

Election of Officers: The following officers were elected: President, Dr. Robert T. Hastings, Elk Rapids; vice president, Dr. J. W. Zimmerman, Traverse City; secretary-treasurer, Dr. E. F. Sladek, Traverse City; medico-legal advisor, Dr. F. G. Swartz, Traverse City.

Following the showing of three reels of motion pictures on obstetrics, the meeting was adjourned.

A special clinical meeting of the Grand Traverse-Leelanau County Medical Society was held at the J. D. Munson Hospital at 4:00 P. M. on January 23, 1934.

Forty-five doctors from the region extending from Manistee and Cadillac to Harbor Springs attended this meeting and listened to excellent talks by three University Hospital staff members. Dr. Cameron Haight gave a very comprehensive paper on "Surgical Procedures in the Treatment of Tuberculosis." Dr. Paul Barker spent considerable effort in explaining the use of the electro-cardiograph, both as

a diagnostic and a prognostic aid. Dr. Henry Ransom in his usual smooth manner thoroughly covered the subject of "Carcinoma of the Colon and Rectum."

A 7:00 P. M. dinner at the Park Hotel, assisted by plenty of the usual Traverse City hospitality, was served to the assembled physicians and materially assisted them in enjoying this most interesting meeting.

E. F. SLADEK, *Secretary*.

GRATIOT-ISABELLA-CLARE COUNTY

The regular monthly meeting was held January 18, 1934, at the Wright Hotel, Alma, with the president, Dr. A. D. Hobbs, presiding. The usual dinner was served before the program. Nineteen members and Dr. Julius Powers, Saginaw, the district councillor, were present.

Dr. B. J. Graham was elected secretary-treasurer to succeed Dr. E. M. Highfield, deceased.

The society recommended that a letter of condolence and sympathy be sent to the widow of Dr. E. M. Highfield, who died December 29, 1933, of coronary sclerosis. An obituary of the doctor was ordered to be written and sent to THE JOURNAL of the Michigan State Medical Society. This was done by Dr. DuBois, secretary pro tem.

Dr. Carney, as chairman, reported on the activities of the committee on Medical Economics, with special reference to the care of the indigent sick under the new Federal Emergency Relief plan. General discussion followed.

Dr. Powers, councillor, reported the most recent activities of the council and discussed various phases of the present medical economic situation.

Dr. Wilcox, chairman, reported for the committee on physical examinations, outlining plans for the periodic examination of members of the society.

The following bills were ordered paid: Postage 90c; telephone 80c; flowers for Dr. Highfield's funeral \$5.15.

The application of Dr. L. L. Davis, Mt. Pleasant, for membership was referred to the board of censors.

Dr. Don Howell read the scientific paper of the evening, dealing with practical considerations of the eye, ear, nose and throat which the general practitioner should know. The talk was keenly enjoyed and led to extended discussion.

The following committees for the year 1934 were appointed:

Economics Committee: Dr. T. J. Carney, chairman; Dr. R. A. Wilcox, Dr. W. E. Barstow, Dr. M. J. Budge, Dr. L. F. Hyslop, Dr. A. D. Hobbs.

This committee is to act as a Board of Control and a committee on Economics, Legislation and Medico-Legal activity.

Committee on Preventive Medicine: Dr. K. P. Wolfe, chairman; Dr. C. F. DuBois, Dr. W. L. Harrigan.

Program Committee: Dr. A. D. Hobbs, chairman; Dr. C. F. DuBois.

Committee on Physical Examinations: Dr. R. A. Wilcox, chairman; Dr. B. J. Graham.

Committee on Publications, Publicity and Education: Dr. B. J. Graham, chairman; Dr. R. H. Strange, Dr. A. L. Aldrich, Dr. Myron Becker.

C. F. DuBois, *Secretary pro tem*.

JACKSON COUNTY

The Jackson County Medical Society met at the Hayes Hotel on the evening of January 16, 1934, for the regular monthly meeting. The minutes of

the preceding meeting were approved as printed in the BULLETIN. Dr. Leonard, president of the Society, announced the personnel of the committees for the coming year and urged all the members to give them their support.

Dr. Clarke moved that Dr. Brogan be made an honorary member of the Society. Motion seconded by Dr. Enders. Motion carried. It was moved by Dr. Porter that the applications of Dr. Caldeira and Dr. Tate for membership in the County Society be accepted. Motion carried. It was also moved by Dr. Porter that the matter of securing new emblems for the use on physicians' cars be postponed for another month.

Dr. Don Kudner, program chairman, then introduced Dr. Frederick Collier, Professor of Surgery at the University of Michigan, who gave a very interesting discussion of his personal experiences during the world war.

R. H. ALTER, *Secretary*.

LIVINGSTON COUNTY

The Livingston County Medical Society met at the State Sanatorium on Friday evening, February 2. After a dinner a business session took place.

The advisability of the State Department of Health sending a Public Nurse to this county was discussed and a resolution for the improvement of that action was presented and adopted. Various communications from the State Secretary regarding the welfare program and the limited participation of osteopaths, etc., were presented and fully discussed. It was regularly moved and seconded that a copy of the Attorney General's ruling, as given in Doctor Warnshuis's letter of January 23, be presented to the proper authorities in the county.

Following the business session the medical phase of the meeting took place. Instead of a discourse by a guest speaker, we tried the experiment of permitting the various members to present cases out of their own private practice. A great majority of the members came prepared with cases to present, but time was only available for some five or six to do so. The type and variety of cases brought up for discussion was most interesting and revealed the potential possibilities for this type of meeting in any County Society that might feel the urge to rely once in a while upon "home talent." We feel that the experiment will be repeated once or twice annually in the future; that it was successful, and a procedure that can be recommended to the various societies in the state.

R. S. ANDERSON, M.D., *Secretary-Treasurer*.

MACOMB COUNTY

The January meeting of the Macomb County Medical Society was held on Monday, January 8, 1934, at 12 o'clock noon, at the St. Joseph's Hospital. There were twenty members present.

Minutes of the previous meeting were read and accepted. The president announced that the next meeting would be devoted entirely to the discussion of the welfare problem.

The committee appointments for 1934 were as follows:

Membership.—Dr. J. M. Croman, Jr., chairman; Dr. A. A. Thompson, and Dr. R. W. Ullrich.

Program.—Dr. R. F. Salot, chairman; Dr. R. E. Lynch, and Dr. A. B. Bower.

Entertainment.—Dr. R. W. Ullrich and Dr. D. B. Wiley.

Public Health.—Dr. W. J. Kane and Dr. R. Reitzel.

Legislative.—Dr. A. J. Warren, Chairman, Dr. Austin Heine, and Dr. O. Fleumer.

The speaker of the day was Dr. H. Kirschbaum, of Detroit, who gave an illustrated discourse on the use of the Kieland forceps, pointing out the advantages and methods of using same instrument. This talk was followed by some interesting motion pictures on "Breech-Extraction and Scopolamine Anesthesia."

The meeting adjourned at 2 P. M.

A special meeting of the Macomb County Medical Society was held on Friday evening, January 19, 1934, at the Gowanie Golf Club. There were twenty-four members present.

The chairman explained the purpose of the meeting, stating that many difficulties had arisen since the inception of the F.E.R. and that this meeting was called to explain to the members the necessary procedure to hospitalize patients who are indigent.

Dr. Warren, chairman of the Society Welfare Committee, explained the procedures necessary under the Afflicted Children Act—taking in children under eighteen, and also the afflicted adult. These cases must be approved by the Judge of Probate and investigated by the Poor Commission, before hospitalization. These cases are county obligations and are to be treated by the physician who originally handled the case. Dr. Heine then outlined the procedure in handling contagious disease cases, pointing out that each physician will handle his own indigent contagious cases and bill the county Contagious Disease Committee, for same each month. Discussion which followed this was regarding the Federal Emergency Relief with respect to medical care. The consensus of opinion was that the indigents were not being properly cared for under this program. The president then requested that any member, who has any specific complaint, should send it, in writing, to Dr. A. J. Warren within the next few days.

Dr. Warren announced that the County Welfare Committee would meet with the County Relief Administrator in a few days and that the committee would have a report for our next meeting.

The meeting adjourned at 2 P. M.

O.M.C.O.R.O. COUNTY

The officers and committees of the O.M.C.O.R.O. County Medical Society for the year 1934 are as follows:

President, Dr. Ruey Ford; vice president, Dr. Jardine; secretary-treasurer, Dr. C. G. Clippert. Delegate to 1934 convention, Dr. C. R. Keyport; alternate, Dr. Rifenberg. Preventive Medicine Committee: Dr. Keyport, Dr. McKellop and Dr. Clippert.

The opinion of the Attorney General relative to the status of the osteopaths vs. M.D.'s, received from the State Secretary, will be passed on at our next meeting.

C. G. CLIPPERT, *Secretary*.

NEWAYGO COUNTY

The annual meeting of the Newaygo County Medical Society was held at the Kimbark Hotel in Fremont, February 10, 1934.

After luncheon the meeting was called to order by the president, Dr. Willis Geerling.

Members present were Drs. Drummond, Lettinga, Moore, Stryker, L. J. Geerling, Willis Geerling, De Haas, and the secretary.

The minutes of the last regular meeting were read and approved by the Society.

The following officers were then elected for the ensuing year: President, Dr. O. D. Stryker, Fremont; vice president, Dr. P. Drummond, Grant; secretary-treasurer, Dr. W. H. Barnum, Fremont.

The delegate to State Medical Society is Dr. A. C. Tompsett, Hesperia; alternate, Dr. H. R. Moore, Newaygo.

W. H. BARNUM, M.D.,
Secretary.

SAINT CLAIR COUNTY

A regular meeting of Saint Clair County Medical Society was held at Hotel Harrington, Port Huron, Michigan, Tuesday, January 16, 1934. Twenty members and two guests from Sanilac County Society were present for supper. When the meeting was called to order by President A. B. Armsbury twenty-nine were present.

By direction of the president the reading of the minutes of the preceding meeting were passed. Eight communications were read by the Secretary. Some remarks regarding the Saint Clair Community Hospital were made by Doctor Heavenrich. Doctor Patterson, chairman of a special committee, reported on the hospital facilities at Saint Clair, Yale and Capac. By motion, duly supported and carried, the special committee were discharged. It was moved, supported and carried that the Society endorse the Saint Clair Community Hospital for certain cases under the Michigan Crippled Childrens' Commission. Doctor Heavenrich discussed the Crippled Childrens' Act. He stated unless cases were sent to Ann Arbor that expenses would be paid by the County. The doctor stated the State Medical Society were attempting to amend the act.

President Armsbury spoke a few words as to action upon the application of the Capac Hospital for endorsement by the Society. It was moved, supported and carried that Capac Hospital be not endorsed by the Society. It was moved, supported and carried that the Yale Hospital endorsement be laid upon the table.

Doctor Heavenrich made a verbal report upon action of The Council of the State Society at its recent meeting. It was moved, supported and carried that the members of this Society do not make any old line life insurance examinations for a fee less than five dollars.

The Hon. Clair R. Black, Judge of Probate for Saint Clair County, was elected to honorary membership in this Society.

Upon motion duly made and supported the membership dues of this Society were set at \$13 for the present year.

The special committee consisting of Doctors Waters, Burley and Patterson for the medical relief of the indigent made a verbal report. A long comprehensive discussion of the whole subject finally resolved itself into a motion, duly supported and carried which allowed the committee to arrange further conference with the County Emergency Welfare Relief organization and to effect any possible arrangement for the medical care of the indigent; further that the Society and its several members agree to abide by whatever arrangement the committee would make. It was moved, supported and carried that the non-members of the County Society practicing medicine in the county be asked to support any arrangement to care for the medical indigent.

Doctor MacPherson of Saint Clair stated that Doctor Wass of his community desired to join our Society and the Secretary informed him of the necessary action and form of application in order to accomplish the same.

It was moved, supported and carried that Doctor Ault be asked to defer his talk on treatment of hemorrhoids until the next meeting.

Doctor MacPherson made a short talk upon conditions existing in Saint Clair and of the work ex-

pected of the members of our profession without remuneration by the various welfare organizations, etc.

It was moved, supported and carried that the president appoint a committee to be known as the Press Committee. Adjourned at 9:35 p. m.

A regular meeting of Saint Clair County Medical Society was held at the Hotel Harrington, Port Huron, Michigan, February 6, 1934. Supper was served to about twenty members and guests and the meeting was called to order, with President A. B. Armsbury in the chair, at eight p. m. with twenty-six members and four guests present.

The minutes of the preceding meeting were read and approved with one correction as made by Doctor Heavenrich who stated the Secretary had made an error in recording certain figures.

Five communications were read. The chair ruled that unless there was objection the matter of again considering the plea for endorsement of the Capac Hospital would not be taken up. No objection was heard.

The president then called upon Doctor Waters, Chairman of the Committee on Medical Care for the Indigent, for a report. Doctor Waters made a verbal report of the activities for his committee and stated that an agreement had been made between them and the County Emergency Relief organization for the care of persons and families on the welfare list. He stated that so far twenty-one physicians in Port Huron and twelve throughout the county had signed an agreement to care for welfare cases at seventy-five cents at the office and one dollar and a half at the home, etc. There was a discussion relative to divulging the diagnoses of welfare cases for the information of the organization and it was decided to appoint a committee to decide such issues. The Chair appointed Doctors Cooper and Thomas as a medico-legal committee. It was moved, supported and carried that the report of Doctor Waters' committee be adopted. Some discussion ensued with regard to the refusal of some of those physicians who had signed the agreement for welfare relief to respond to obstetrical calls. The president believed this matter should be corrected. He stated that the profession was obligated to prevent the neglect of such cases. The fact that those employed as CWA workers were dropped from the welfare rolls and were expected to pay their own physician seemed to complicate the situation further. Doctor LeGalley, the county physician, stated that he would endeavor to take care of as many obstetrical cases as he could during the next few months, particularly those cases where the head of the family was employed as a CWA worker. He stated fifty-odd such cases were due for confinement within the next two or three months.

The president announced the following committees: *Press*, Doctors Waters and Heavenrich; *Legislative*, Doctors Patterson, DeGurse, D. J. McColl, Waltz and Carney.

The president then called upon Dr. Garnet W. Ault who read a very short, timely and interesting paper on, "The more common conditions of the anorectal tract which may be treated in the office." The subject was covered in a most original and thorough manner and enjoyed by those present. The discussion was carried on by Doctors Thomas, Burley, MacPherson and Smith; Doctor Ault closing the discussion in the usual manner.

In conclusion the president complimented Doctor Ault on his talk and stated that there were many other members of the Society who could give interesting talks if they would overcome their bashfulness. Meeting adjourned at 9:30 p. m.

GEORGE M. KESL, *Secretary-Treasurer*.

TUSCOLA COUNTY

The regular meeting of Tuscola County Medical Society was held at the Vassar Hotel, Vassar, Michigan, February 8, 1934. Vassar physicians acted as hosts.

The meeting was conducted by Dr. O. Johnson, president. Dr. E. C. Swanson presented a motion picture film, x-ray films, and discussion on Public Health Aspect of Tuberculosis. Dr. Julius Powers of Saginaw, district councilor, gave a discussion of the present political status of medicine in the country.

Dinner was served after the meeting.

L. L. SAVAGE, M.D., *Secretary*.

WOMAN'S AUXILIARY, MICHIGAN STATE MEDICAL SOCIETY

MRS. ELMER L. WHITNEY, President
18224 Wildemere Ave., Detroit

MRS. C. L. STRAITH, Secretary-Treasurer
19305 Berkley Road, Detroit

EXECUTIVE MEETING

The Executive Board of the Woman's Auxiliary to the Michigan State Medical Society held a luncheon and business meeting at the Hotel Statler, in Detroit, Michigan, on January 16, 1934, with the following members present: President, Mrs. E. L. Whitney, Detroit; Vice President, Mrs. W. R. Chynoweth, Battle Creek; Secretary and Treasurer, Mrs. C. L. Straith, Detroit; Past President, Mrs. F. A. Mercer, Pontiac; Program Chairman, Mrs. P. R. Urmston, Bay City; Public Relations Chairman, Mrs. H. M. Heitsch, Pontiac; Press Chairman, Mrs. L. C. Harvie, Saginaw; Organization Chairman, Mrs. Guy L. Kiefer, East Lansing; Historian, Mrs. Earl McIntyre, Lansing; and members of the Advisory Council: Dr. F. C. Warnshuis, Grand Rapids; Dr. L. J. Hirschmann, Detroit; Dr. T. F. Heavenrich, Port Huron; Dr. J. Milton Robb, Detroit. Mrs. J. A. McLandress, president of the Saginaw County Medical Auxiliary, guest.

Each member of the Advisory Council was asked by the president to express his views relative to the betterment of the Auxiliary and to suggest ways and means whereby the Auxiliary could be of greater help to the medical profession.

DR. HIRSCHMANN: Spread the idea of health work . . . that every doctor's office should be a health center. Instead of having to employ others apportion the work out and let each receive compensation.

The medical profession are willing to take care of the indigent at a very nominal cost.

Medical legislation we will always have with us.

Next year is another legislative year and we should sound out prospective candidates.

DR. HEAVENRICH: I would like to see the State Auxiliary have a unit in every county. It stimulates a better feeling among the doctors.

I think that the Auxiliary ought to take an interest in political matters. Women do not receive as cool a reception as men. See that the proper men are nominated. *You have to wake your husbands up* and let them go after the rest.

DR. ROBB: A good Auxiliary woman is an aid to society and she should be vitally interested in medicine. Doctors' wives should know more about medical history and background.

Informed doctors' wives should be on boards of other organizations wherever possible to give authentic information on medical subjects. "In moulding public opinion, this can be done in a better way if they have the proper background to proceed."

I would suggest that you divide the state into sections—meet occasionally. Hold institutes, all day sessions, with other health organizations of that section to consider and help solve various health problems, etc.

You cannot do anything with lay people on boards if you simply set yourselves. If you cannot give them all of it, have some information that they can read.

Have definite information to give.

Cults will be here till Gabriel blows his horn.

As the Auxiliary is progressing, you are developing a

nice feeling among yourselves, not in a society way alone, but for the good of the public.

DR. WARNSHUIS: I baptized the National Auxiliary. (Gave brief history.)

Adopt a specific state program.

There are many counties in the state that need the Auxiliary and you should go in and organize.

I would encourage each unit to devote at least part of its time to the study of medical history and background.

Adopt a program for local activity. Make contacts with other organizations. Develop sound, safe public opinion. By your contacts you can gain public confidence and public respect.

Inspire your clubs to hold one or two meetings during the course of the year devoted to some phase of preventive medicine. Sponsor High School assemblies on preventive medicine. (Pasteur—influences of his life; Lister—on development of aseptic surgery.)

On the legislative program you can be of beneficial help. We need friends in the legislature. Show an interest.

A good many doctors have given little thought to these outside forces that have been crowding him out of the practice of preventive medicine.

We must combat social medicine and *we need your help*.

Have all of your Auxiliary members make their husbands bring home the JOURNAL. Encourage them to read it. An amount of \$600 is spent on wrappers alone each year. At least, see that they are torn off.

I would suggest joint meetings with wives of dentists and lawyers.

Each Auxiliary should have an active president and secretary and, at least, one or two others inspired with the serious objectives of the society.

Hygeia is being sent to every member of the legislature.

MR. WHITNEY: We are going to make a great effort to do away with welfare work and auxiliary meetings which are bridge parties mostly and substitute for this regular programs of educational value, which will fit our Auxiliary members to take their proper places in the moulding of public opinion.

MRS. LLOYD C. HARVIE, *Press Chairman*.

KALAMAZOO COUNTY.—On January 16, the Woman's Auxiliary to the Kalamazoo County Medical Society enjoyed a coöperative dinner, served at 6:30, with Mrs. Walter den Bleyker as hostess. This was followed by an interesting discussion on tentative plans toward affiliated work and a social hour. Thirty-one members were present.

OAKLAND COUNTY.—Twenty-five members of the Oakland County Medical Auxiliary attended the one o'clock luncheon which was held at the Pontiac General Hospital on January 19th. Rev. Bates Burt, rector of All Saints Church, and a former chaplain of Marquette prison, talked to the group on "Crime" and the effect of early religious training on the lives of children. A pleasing group of songs were sung by eight girls of the High School Glee Club. During the business session, which was conducted by the president, Mrs. J. E. Church, the organization accepted with regrets the resignations of Mrs. Church and the president-elect, Mrs. B. M. Mitchell, who were forced to resign because of illness in their respective families. The afternoon was spent in making dressings for the hospital.

SAGINAW COUNTY.—The Saginaw County Auxiliary held its February meeting on Tuesday, the 13th, at the Robinson Tea Rooms. Luncheon was served at one o'clock. The speaker was Dr. J. H. Powers, Councilor for the Eighth District, Michigan State Medical Society, who talked on "Some Present Day Problems of the Medical Profession." This will be followed by sewing for St. Luke's Hospital.

WAYNE COUNTY.—During the past month the Monday night lectures sponsored by the Study Group of the Woman's Auxiliary to the Wayne County Medical Society have provided most enjoyable as well as instructive entertainment. Usually they are augmented by lantern slides. The scope of the course is "Medicine in the Ancient World." On January 22, Dr. Frank Sladen spoke on Egyptian Medicine, and on February 5, Dr. E. D. Spalding took up Greek Medicine. These meetings, which are open to non-members as well as members of the Auxiliary, have had such a large attendance that

they are being held in the Visiting Nurses' Headquarters (on the same property as the Wayne County Medical club house.) The lectures being on Monday nights, many doctors bring their wives before they attend the Wayne County Medical meetings at the Art Institute.

Two plans are now under way to benefit the piano fund. The one is for doctors' wives to form neighborhood groups of eight to play bridge, once at the home of each member before the first of May. This plan has the added purpose of promoting friendship among doctors' wives living in the same vicinity. The luncheon or tea, which is served, must consist of no more than a salad or hot dish, rolls and coffee; and the small fee of twenty-five cents charged at each meeting is given to the piano fund. More than twenty members agreed to captain groups such as these.

The other plan is in the form of a public speaking course under the direction of Mrs. Myron B. Vorce. Four captains are sponsoring this plan. The class is to meet on six consecutive Wednesday afternoons from two to four, the first meeting having been held on January 31. The money raised will also be devoted to the piano fund.

The Welfare Committee reports that four maternity kits have been completed for the use of doctors of the Wayne County Medical Society in their charity work. Each kit contains the following articles: 2 hospital gowns, 1 abdominal binder, 1 delivery pad, 1 dozen sanitary pads, 1 receiving blanket, 2 infant's binders, 2 infant's shirts, 2 infant's petticoats, 2 infant's nightgowns, 1½ dozen diapers, 2 pairs infant's stockings, 1 infant's tufted comfort, 1 cake Castile soap, 1 can talcum powder, assorted safety pins, boric acid solution and olive oil.

Fourteen names have recently been added to the membership list of the Auxiliary.

OBITUARY

DR. RALPH J. GOODENOW

Dr. Ralph J. Goodenew of Detroit died in the East Side General Hospital on February 12, 1934, from a heart attack. He was born in Jackson fifty-four years ago, where he received his early education. He attended and graduated from the Detroit College of Medicine and Surgery in 1907. In 1910 he opened an office at 11410 E. Jefferson Avenue, Detroit, where he had practiced up to the time of his death. He was director of the Medical Staff of the East Side General Hospital. The late Dr. Goodenow was a member of the Wayne County Medical Society, Michigan State Medical Society and the American Medical Association. He is survived by his wife, Jeanette, whom he married in 1910, and three children, Alice E., Lorraine J. and Ralph J., Jr., and his father, Irving J. Goodenow, and a sister, Mrs. Robert R. White, both of Chicago.

DR. E. M. HIGHFIELD

Dr. Ernest M. Highfield, Alma, Michigan, died December 29, 1933, of coronary sclerosis. His death occurred about 10 A. M. o'clock at his office, unexpectedly, as he had been in good health, having walked to his office that morning.

The doctor was born in Strathroy, Ontario, Canada, March 17, 1877, the son of William and Angeline Highfield. His early education was obtained in Ontario. Many years of his adolescent life were spent at Harper Hospital, Detroit, first

as a patient due to an osteomyelitis of the right leg, and later as an employee. He received his doctor's degree at the Detroit College of Medicine in 1904, followed by an internship at Harper Hospital. He then took over the practice of Dr. L. S.



DR. E. M. HIGHFIELD

Crotser at Edmore, Michigan, and remained there five years. In 1911, he moved to the nearby town of Riverdale, where he had a very busy and profitable practice as the community's beloved and only physician. From 1925 until his death, he practiced in Alma, Michigan.

The doctor had two hobbies, medicine and golf. He was an intensive reader of medical literature, and possessed a keen analytical mind. Very quiet mannered, kindly, thoughtful and courteous, he was loved by all who came in contact with him, professionally or socially. He served as secretary-treasurer of the Gratiot-Isabella-Clair County Medical Society for twenty-three years. Dr. Highfield was the attending physician to the Gleaners Memorial Home, a member of the Masonic Lodge, and a fellow of the American Medical Association.

Dr. Highfield married Louise Courtney, deceased, in 1906, and Helen Kingsbury of Alma, Michigan, in 1929. He had no children. The doctor is survived by his widow; a step-son, Allen Highfield, a druggist in Greenville; two brothers and one sister, Russell Highfield of Detroit, Archie Highfield of Walpole Island, Ontario, and Mrs. Roy Bliss of Oxford, Michigan.

DR. GEORGE EDWIN MCKEAN

Dr. George E. McKean of Detroit died February 4th of complications following a double mastoid infection. He was born at Mt. Hope, Ohio, in 1868, the son of Dr. William and Rachel McKean. He studied at Mt. Union College and at Northwestern Ohio Normal University. He attended the Medical Department of the University of Michigan, where he graduated M.D. in 1894. After three years' practice in Ohio, Dr. McKean moved to Detroit, where he practiced to within two months of his death. He had pursued post-graduate work in London, Edinburgh, Berlin, and Munich. Dr. McKean limited his practice to internal medicine, in which he had also

a large consulting practice. He was attending physician at Harper Hospital for over twenty-five years. He was consultant in medicine at the Woman's Hospital, The St. Joseph Mercy, Highland Park General Hospital and also the Evangelical Deaconess Hospital. Dr. McKean served in the World War fifteen months with the Harper Hospital Unit. He was director and professor of medicine of the Detroit College of Medicine. He was a former president of the Detroit Medical Club and a past president, and for many years trustee, of the Wayne County Medical Society. He was a member of the Michigan State and American Medical Associations, The Interstate Clinical Society and a fellow of the American College of Physicians. In 1894 Dr. McKean married Lucy E. Moore, of Ann Arbor, Michigan. He leaves, besides Mrs. McKean, three sons, Dr. Richard M. McKean, Robert E. McKean, and Dr. Thomas McKean; his mother, Mrs. Rachel McKean, Washington, D. C.; two brothers, Vice Admiral Josiah S. McKean, U.S.N., retired, of Carmel, Calif., and John McKean, Delray, Fla., and a sister, Mrs. Janes Benfer, of Washington, D. C.

RESOLUTION

WHEREAS Dr. George E. McKean was an honored member of the medical profession of Detroit and Wayne County, and received the highest honors to be conferred by his confreres in this city and county; and

WHEREAS, he has maintained a close association with the medical profession of this city and has been known as "the doctors' doctor" by our physicians, who keenly feel his loss, and

WHEREAS, he was an outstanding citizen and the personification of honor, and held the respect of men for his leadership and their affection for his integrity; therefore be it

RESOLVED: That the Wayne County Medical Society pause in its deliberations to honor the memory of an illustrious physician, a sincere friend, a loving husband and father, a successful leader, and an honorable citizen; and be it further

RESOLVED: That the Wayne County Medical Society express its sincere sympathy to the bereaved members of the McKean family. It sadly realizes that no words from it, formal or informal, can assuage their grief or make them feel less keenly the greatness of their loss.

Adopted by the Wayne County Medical Society.

ALEXANDER W. BLAIN, M.D., *President*.

E. C. BAUMGARTEN, M.D., *Secretary*.

February 6, 1934.

DR. HAROLD WILSON

The sudden death of Dr. Harold Wilson, of Detroit and Birmingham, Michigan, occurred on February 17, 1934. Dr. Wilson's car and that driven by another person had collided; the two had pulled up to the curb but no damage was found to either car or to either person. In a discussion over the right of way Dr. Wilson collapsed and was taken to St. Joseph Mercy Hospital, Pontiac, where on admittance he was found dead. Dr. Wilson was born in 1860 in Cleveland, Ohio, the son of Dr. Thomas Wilson. He received his early education in Cleveland and Cincinnati and graduated with the degree M.D. from the University of Michigan Medical School in 1887. Following his graduation he practiced in Denver, Colorado, being connected with a mining company. Dr. Wilson came to Detroit in 1889, where he had practiced up to the time of his death. The past fourteen years he had been associated with Dr. Ray W. Hughes with offices in the David Whitney Building. For the past four years

Dr. Wilson had made his home in Birmingham, Michigan. He was at one time president of the Wayne County Medical Society. Dr. Wilson was a life long student. He excelled as mathematician and was likewise a musician of high order. Dr. Wilson was for many years a member of the staff of the Grace Hospital, Detroit, and also a member of the American Academy of Ophthalmology and Otolaryngology, the American Medical Association, the Michigan State Medical Society and the Wayne County Medical Society. He was a Fellow of the American College of Surgeons. He leaves two daughters, Mrs. J. Morgan, of Hollywood, Calif., and Mrs. Marion Toido, of Chicago. Following the funeral service, February 18, the remains were cremated.

DR. RAYMOND J. SISSON

Dr. Raymond J. Sisson of Detroit and Birmingham, died February 23, 1934, in Massachusetts General Hospital, Boston, after being ill with pneumonia for three weeks. He was thirty-six years old. Dr. Sisson was a graduate of Syracuse University, doing work at Massachusetts General Hospital before coming to Detroit in 1923 to join the staff of Henry Ford Hospital. In 1924 he married Marjorie Mack, daughter of Mr. and Mrs. Joseph Mack. They lived at 8905 E. Jefferson Avenue, Detroit, and Dr. Sisson maintained offices in the David Whitney Building. He was a member of the Wayne County Medical Society and the Michigan State Medical Society. He was buried from the home of his mother, Mrs. Bernard Sisson, in Syracuse, New York. Besides his mother and wife, he leaves a brother, Bernard, of Syracuse.

GENERAL NEWS AND ANNOUNCEMENTS

Failure to pay your dues by April 1 will mean suspension. See your County Secretary today.

Dr. H. A. Luce and Dr. Nathan Sinai, sent on a mission to England by the State Society January 4, returned to Detroit on February 10.

The A. M. A. meets in Cleveland the week of June 10, 1934. It is suggested that you make your hotel reservations now. Statler Hotel is official headquarters.

There are several new ads in this issue. Turn to them. Hack Shoes, Detroit, solicits your reference of patients. For real foot comfort secure their advice.

The cartoon entitled "Waiting for the Doctor and Making the Doctor Wait," which appeared in the February number of this JOURNAL is by McCutcheon of the *Chicago Tribune*, to which publication our acknowledgments are due. The *Chicago Tribune* will furnish copies of this cartoon at ten cents each. The copy is suitable for framing.

Past President's Night a Great Success: Dr. O. S. Armstrong, president of the Wayne County Medical Society in 1892-93 (oldest living past-president), and Dr. James E. Davis, president in 1921-22, and Dr. James H. Dempster, president in 1926-27, were the honored guests at the Past-Presidents' Party of February 12 in the Wayne County Medical Society club rooms.—*Detroit Medical News*.

Dr. William E. Keane of Detroit was elected president of the staff of Providence Hospital at the staff meeting held on January 27, and Dr. Allan McDonald has been elected president-elect. Dr. McDonald has been connected with the hospital since 1901, when it was located at the corner of Elizabeth Street and St. Antoine, when he was chief of the obstetric service. He performed the first operation on Good Friday, 1911, when the new hospital was opened on West Grand Boulevard. Good Friday was evidently a lucky opening day for the New Providence Hospital for Dr. McDonald says the patient is still alive and well.

OH! OH!

As oor freen's are ridin' roon' aboot,
upon th' railroad trains,
They're aye for shufflin' o' th' cairds,
an' haein' social games;
An' sometimes "innocence abroad"
is coaxed, a haund tae tak',
Bit when they travel, nae sae far,
they find he kens the pack.

Weel, lads, ah'm nae for tellin' much,
bit ah'll gi' ye a' a tip,
If ye're boond tae play some poker
as ye journey on yer trip,
Dinna pick a Scottish traveler,
o' th' Presbyterian flock,
Especially if he cam awa
frae Aberdonian stock.
Guid Nicht WEELUM.

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SOME FUNCTIONS OF THE CEREBRAL CORTEX

LECTURE I. AUTONOMIC REPRESENTATION IN THE CEREBRAL CORTEX

J. F. FULTON, M.D.
NEW HAVEN, CONNECTICUT

I.

The centenary year of the publication of Beaumont's book just passed has brought forth many appreciations which vividly portray the man and his work. In reading these tributes I have been impressed by the fact that William Beaumont was an individual who lived intensely in the present, and that, though well informed, he drew very little of his inspiration from those who had gone before him. When on occasion he allowed his attention to be diverted from the object of his immediate interest, he turned his eyes more often to the future than he did to the past. I feel, therefore, that a lectureship which affords opportunity to describe a living field of research is more thoroughly in keeping with the spirit of the man you wish to honor than any other possible tribute. The privilege of delivering the Beaumont Lectures is one already enriched by tradition, and I regard your invitation as a generous honor,

one which as a physiologist I especially cherish because of the association with Beaumont and with the name of a distinguished medical society.

The illustrious example set by my predecessors in these lectureships causes me great embarrassment. How, for example,

Lecture II will follow in the May number of THE JOURNAL.

could any one compete with a Beaumont lecturer who was born at Prairie du Chien⁶? I can only state that if I am fortunate enough to die there, my final breath would be drawn with more than ordinary emotion! Dr. Cannon has told you that his investigations were in a sense the direct outcome of the studies of Beaumont. I can make no such claim, and yet in the realm of the central nervous system, in which my interest lies, it is perhaps significant that the newer developments have led one to consider problems of visceral function,—problems with which Beaumont's name is closely associated. It has gradually come to be appreciated that the nervous system regulates, not only the musculature of the body, but all phases of metabolism as well, and the extent to which the regulation of movement and the regulation of metabolic activities are correlated has turned out to be far more intimate than even Claude Bernard, the earliest and perhaps the most farseeing student of neurovisceral mechanisms, had anticipated. Dr. Cannon mentioned last year⁶ that the contractions of the stomach were influenced by the level of blood sugar in the blood vessels of the brain, and that hunger contractions could be promoted by perfusing a dog's head with blood of low sugar content, even though the head of the dog were connected to its stomach only through the vagus nerves. It is scarcely surprising therefore that in a recent investigation of the functions of the cerebral cortex in monkeys and chimpanzees we were led almost at the outset of the investigation to consider the influence exerted by the cortex on the activities of the gastrointestinal tract. It may be of some interest to state exactly how this came about.

In a study of the functions of the frontal lobes of monkeys and chimpanzees,¹⁰ which I propose to describe in the next lecture, several healthy and highly trained specimens were subjected to bilateral removal of parts of the frontal lobes. This procedure was sometimes carried out at one operation, and sometimes in two stages, the frontal lobe being removed first from one hemisphere and later from the other. Animals in which such an extirpation of cortical tissue had been carried out exhibited all the usual neurological features of frontal lobe deficit: great restlessness and distractibility, etc., and we soon became aware that they were excessively hungry. Indeed they appeared to eat

many times the amount of food ingested by a normal monkey. It was thought at first that this might be due to some disturbance of basal metabolic rate, but it was soon found that the basal metabolism was not altered. And then, much to our distress, three valuable animals died from acute intussusception with obstruction. These animals were otherwise healthy and no cause for death was discovered apart from the obstruction. It did not occur to us at first that there could be any relation between the cortical lesion and the intestinal obstruction, but when the autopsy findings of the third fatality were disclosed, it seemed essential to Dr. Watts, a neurological surgeon who was then working in the laboratory, to consider the matter in greater detail.²⁴ Could it be that the movements of the gut were directly influenced by the cerebral cortex and, if so, what other autonomic functions were represented in the cerebral hemispheres? To answer these questions adequately it will be necessary to pause for a moment to consider briefly what is known concerning the subcortical regulation of visceral functions.

II.

By definition and by implication of its name, the autonomic nervous system is a peripheral system of nerves and ganglia out of reach of the "will," which is concerned with the regulation of visceral processes. The connection of this system of nerves with the central nervous system, long recognized anatomically, had been little emphasized physiologically, and it was not until the well-known studies of Bechterew,³ Karplus and Kreidl¹³ which were published just before the War that attention began to be focused upon the representation within the central nervous system of the visceral activities of the body. Claude Bernard in his early studies on the vasomotor reflexes had directed attention to the fact that important centers for the control of these reactions existed in the medulla oblongata. Karplus and Kreidl found other autonomic centers in the diencephalon, and after the War it came to be recognized that many autonomic reflexes, such as those involved in heat regulation,^{2, 14} disappeared when the diencephalic area containing the hypothalamic nuclei were destroyed. More recent study of the hypothalamus has indicated that this region of the brain is concerned with the regulation

of still other visceral functions; but there is ample indication that the hypothalamus itself is dominated by higher levels of nervous integration. Thus when the forebrain is removed, leaving the diencephalic area intact, the hypothalamic nuclei become over-active, giving rise to periodic discharge of the autonomic system. These bursts of activity, which especially affect the sympathetic division, are dependent upon the integrity of the hypothalamic area.^{1, 7} If the hypothalamus of an intact animal is normally held in check by higher centers, these self-same centers must play an important part in the regulation of autonomic functions. The problem, therefore, is to consider which of the higher centers are involved and what part they play.

On *a priori* grounds there is every reason to believe that the cerebral cortex itself must be intimately associated with the regulation of visceral activities. One is not obliged to resort to vague generalities concerning the influence of the "mind" on the body, for there are many objective phenomena, such as the blush of embarrassment or the pallor of fright, which clearly involve integrations at the cortical level; conditioned reflexes also suggest themselves, for these reactions depend upon the integrity of the cortex. Conditioned salivation and gastric secretion, the best known of all the conditioned reflexes, have their efferent path in the parasympathetic system. I am not aware that the Pavlov school has ever considered the anatomical pathways between the cortex and the efferent channel of outflow of these important autonomic functions, and it is clearly a problem that merits inquiry. It indeed would be surprising in view of these *a priori* considerations if it were impossible to find evidence of autonomic representation in the cerebral cortex.

III.

During the 19th century the relation of gastrointestinal movements to the cerebral cortex was studied by Bochefontaine, Bechterew and many others. They observed that stimulation in the region of the motor area of curarized dogs caused well marked movements of stomach and intestines. Bechterew³ indeed fancied that he could define within this area specific foci for the cardia, pylorus and walls of the stomach, as well as for the intestines. Removal of the higher centers as well as stimulation appears to in-

fluence the gut. Ott and Field¹⁸ originally observed in 1879 (without describing decerebrate rigidity) that when the brain stem of a cat was transected through the posterior part of the thalami great increase occurred in peristaltic movements of the gut. Stimulation of the area caused inhibition of movement. It is commonly recognized among those who have worked upon decerebrate cats that the animal is likely to defecate soon after decerebration. In decerebrate animals free of anesthetic, peristalsis is also active; Patterson²⁰ (p. 194), moreover, finds that decerebration greatly increases the rate of peristalsis in the guinea pig. This strongly suggests that a center above the level of decerebration normally inhibits peristaltic activity of the gut. This inhibition may arise in part from the hypothalamus, but the following observations indicate that in monkeys some cortical center also takes part in the inhibitory process. The normal hunger contractions of monkeys have been studied by Patterson.²⁰

The fatal intussusceptions mentioned above had occurred in three healthy monkeys following bilateral removal of parts of the frontal lobes. This observation gains some significance from the fact that in the course of nearly 300 autopsies on monkeys on which various surgical procedures had been carried out previously intussusception had been encountered only twice, in both instances in animals which were acutely ill. The postoperative intussusceptions might have been fortuitous accidents, but this seemed unlikely, and we therefore undertook to study the response of the gut to stimulation of the frontal lobes and various other parts of the cortex.²⁴ The subdivisions of the frontal lobe will be discussed in the next lecture and it will be sufficient to recall that it is made up of three principal areas: (1) frontal, (2) premotor and (3) motor.

Under light ether anesthesia the monkey's gut has proved to be particularly responsive to faradic stimulation of the frontal region, especially the premotor area. From an area near the superior precentral sulcus weak faradic stimulation caused, after a latency of about 20 seconds, moderate increase in peristaltic movements, principally of the lower intestine and cecum. Associated with this there appeared, generally in the cecum and ileum, large numbers of white bands of strong contraction which were so forceful that they tended at first to prevent the pas-

sage of an oncoming peristaltic wave. If the stimulus persisted for one to one and a half minutes a strong peristaltic wave sometimes engulfed one of the stationary white bands of strong contraction, and in this way an experimental intussusception was readily and repeatedly induced. Sometimes as many as six independent intussusceptions were developed in the same animal. None of the intussuscepted areas persisted, however, for more than a few minutes after the stimulus had been withdrawn. We thus did not witness a permanent obstruction, but no individual stimulus persisted for periods greater than two minutes. These experiments, however, have given a remarkably clear picture of the mechanical events leading up to intussusception.

Intussusception was not elicited through stimulation of points other than those within the premotor area. However, once active peristalsis had been evoked from the premotor area, it could sometimes be augmented from points on the frontal, motor and even from the postcentral region. Primary movements, however, were never produced from such points, except in one instance in which five months after removal of the premotor area stimulation of the frontal area caused peristalsis but not intussusception. In animals in which the vagi had previously been sectioned we were unable to produce intussusception through cortical stimulation, but occasionally weak augmentation of peristaltic movements occurred. The influence of removal of the sympathetic ganglion chain has not yet been studied. The general results of cortical stimulation on the gut are not unlike those recently described by Sheehan and Beattie²² in response to stimulation of the anterior hypothalamic nuclei, except that they did not observe intussusception. Increased flow of gastric juice was seen in several experiments in response to cortical stimulation, but the phenomenon has not yet been studied in detail.

Intussusception and augmented peristaltic movements have thus been produced both from extirpation of cortical areas and from stimulation. This somewhat surprising paradox is in harmony with the belief that the cortex contains both excitatory and inhibitory elements, and that the result of stimulation from any given point is necessarily an algebraical summation of effect. Bilateral removal of both premotor areas clearly destroys an important fraction of the

inhibitory components of gut movement, and the delicate balance between the mutually antagonistic functional units from the cortex is thus disturbed. It is probable that these fibers communicate with the centers of gut innervation both in the hypothalamus and in the medulla.

IV.

Cases of morbid hunger following accidental lesions of the brain have been described sporadically in the literature. They are discussed by Bechterew³ and they were made the subject of a detailed paper by Stephen Paget.¹⁹ One of the cases referred to by Bechterew was a child who suffered a depressed fracture in the midfrontal region from the kick of a horse. When the child recovered consciousness she cried constantly that she wanted more food. An operation was performed and the symptom of increased hunger continued for four days after the splinters of bone had been removed from the frontal region. The case of Sollier and Delagenière²³ also related to an accidental injury. It was followed by an abscess, which was drained over the left parietal lobe, but the man had a hemiplegia and it is therefore clear that the frontal lobe was involved. Several of Paget's cases showed similar symptoms.

One could not attach great significance to these isolated cases if it were not for the fact that monkeys after bilateral extirpation of the frontal areas eat excessively. This first was mentioned two years ago in the report of Fulton, Jacobsen and Kennard,¹⁰ and, in the belief that the ravenous appetite might be due to some disturbance of metabolism, Dr. Bruhn of New Haven undertook to study the basal metabolic rate of these animals as well as of normal monkeys. Bruhn's results⁵ soon made it evident that the "frontal area" animals, despite their greatly increased appetite and activity, had a normal basal metabolic rate. The ravenous appetite is also a part of the syndrome in bilateral premotor animals in which metabolic rate may be increased (owing to spasticity). In view of the abnormal peristalsis of the gut resulting from these cortical lesions, it appears to me logical to suggest that the symptoms of morbid hunger may be due to increased motility of the stomach, and that the cases of morbid hunger reported in the literature may also be attributed to this circumstance. Psychia-

trists, neurologists and neurosurgeons who encounter cases of morbid hunger should not lose the opportunity of making fluoroscopic studies of the gastrointestinal movements.

Many other pathological and psychiatric conditions are associated with bulimia. Kahn¹² has described a phase of increased hunger in a case of Pick's disease, a condition associated with degeneration of the frontal lobes. The ravenous hunger of certain idiots and general paretics is well recognized in psychiatric institutions, and schizophrenics are likely to pass through a period of polyphagia some time in the course of their disease; but as far as I am aware no one has ever studied the motility of the stomach in traumatic cases of morbid hunger, or in psychiatric cases.

V.

An even more convincing proof of the presence in the cortex of autonomic representation has come from the study of the vasomotor disturbances associated with cortical lesions and with faradic stimulation of certain cortical areas. Bechterew has discussed the problem in some detail, but many of his findings must be reinterpreted in the light of the newer knowledge of peripheral vasomotor activity. The fact that the vasomotor mechanisms essential for heat regulation are integrated in the hypothalamus does not preclude the possibility that the more delicate vasomotor adjustments are made in the cortex.

Neurologists have long been aware that the affected extremities of a hemiplegic exhibit vascular changes, pilomotor disturbances and alterations in the activity of the sweat glands. Attention is drawn to this by Gowers¹¹ and by many other neurologists of the 19th century. The edema which sometimes accompanies hemiplegia has recently been described and studied by Weiss and Ellis,²⁵ who point out:

"Circulatory changes may appear immediately after the onset of the cerebral accident and last for years. These changes are not necessarily related to the tone of the musculature or to the degree of paralysis. They occur in the presence both of normal and elevated blood pressure. The most marked unilateral edema develops in patients with previous myocardial failure.

"It is concluded that in cerebral hemiplegia, following disturbance of the central vasomotor regulation, a dilatation of the arteriolar system of the upper part of the body occurs. The diffuse arteriolar dilatation leads to increased blood flow and increased capillary pressure over the paralyzed side.

This increased capillary pressure may lead, especially in association with poor cardiac function, to increased rate of filtration of fluids to the tissue and hence to edema. The functional state of the vessels of the affected side of patients with hemiplegia represents a burden on the circulation which, in the absence of increased cardiac output, is chiefly carried by the normal part of the body. The circulatory changes observed in cases of hemiplegia with marked unilateral edema may have a bearing on the mechanism of the circulation and the formation of edema in congestive heart failure."

Weiss and Ellis referred only to those cases showing vasodilatation of the affected extremities. The premotor animals, and certain human cases as Gowers pointed out, show excess vasoconstriction—a difference which undoubtedly has localizing significance. Since cases of hemiplegia generally owe their symptoms to a vascular lesion involving the internal capsule, the effects may be due solely to interruption of corticospinal pathways in the capsule, but it is generally difficult to exclude simultaneous involvement of adjacent centers in the corpora striata. Vasomotor changes have generally been attributed to some secondary alteration incident to the paralysis. That this is an inadequate explanation is evident from a recently reported case of a tumor of the premotor area which was associated with very little impairment of voluntary power,¹⁵ but which exhibited a marked elevation of temperature over the opposite side of the body. A similar case was reported in 1895 by Rossolimo,²¹ in which a cyst extending from the motor into the premotor region had caused weakness and twitching of the contralateral half of the body, with cyanosis, edema and diminution of temperature of the opposite hand. The temperature of the extremity returned to normal after the cyst had been removed.

VI.

Study of cortical lesions in monkeys and chimpanzees, described in the succeeding lecture, has given excellent opportunity to analyze the effect of cortical extirpation upon the vasomotor conditions of various parts of the body, particularly of the extremities. Dr. Margaret Kennard, who has given special attention to the problem, has made the following observations. When the premotor area of the cortex is removed from monkeys or chimpanzees the skin of the affected extremities becomes colder than that of the normal side. The difference in skin temperature comes on immediately and persists for variable periods up to a month or longer.

These thermal differences may amount to as much as four degrees Fahrenheit. In chimpanzees the skin of the affected extremities is likely to become tough, dry and scaly and all the phases of the disturbance persist long after the temporary paresis has disappeared. This indicates clearly that the changes can not be attributed to paralysis or disuse.

In attempting to discover what part of the vasomotor mechanism is disturbed by premotor lesions, Dr. Kennard made the following observation which may be described in her words.¹⁶

"When a normal animal is subjected to rapid alterations in the temperature of its surroundings, there is an immediate reflex alteration of the skin temperature of the soles and palms which is equal on the two sides. After unilateral extirpation of certain portions of the frontal lobe, abrupt cooling gives rise to *vasoconstriction* which occurs equally and simultaneously in both feet as it does in a normal monkey; but on heating *vasodilatation* occurs *very slowly in the foot opposite to the operated cortex*, whereas in the ipsilateral foot it is prompt and normal in character. This alteration in the vasodilator mechanism is marked immediately after operation, but disappears slowly in the course of several weeks."

Careful controls have been made which afford further indication that the disturbance is specific to the premotor area; full details will be given in the account of this work which will shortly be published *in extenso*. The conclusion is warranted from Dr. Kennard's studies that the cerebral cortex is intimately concerned with the regulation of vasomotor reflexes.

The other autonomic functions represented in the cortex have not yet been thoroughly studied. After removing the premotor area from chimpanzees the affected extremities are moist during the first four or five days after the procedure, whereas the normal extremities are drier. This augmentation of sudorific activity tends to disappear after the first week, and it has not yet been determined to what extent the phenomenon is dependent upon alterations in the vasomotor mechanism. In man following cortical injuries increased sudorific activity may persist for much longer periods.⁴

Salivation has been produced by stimulation of area 6b and it has occurred as a manifestation of focal epileptic seizures when tumors or other irritating agents have encroached upon this region. Foerster and Penfield⁹ have noticed that scars in the region of area 6b have also given rise to epileptic manifestations associated with chew-

ing and salivation. Bechterew³ believed that he had demonstrated an area in the lateral surface of the dog's cortex which evoked salivation on stimulation. This was looked upon as highly significant in view of the intimate relation of conditioned reflexes to salivation. However, Bechterew's salivation area in the dog has not been isolated by subsequent investigators (Pavlov).

Fall in blood pressure has been frequently recorded in response to stimulation of the motor-premotor region. Lewandowsky and Weber in 1906¹⁷ were able to induce a striking fall in the blood pressure of dogs by stimulation of the cruciate sulcus. Dusser de Barenne and Kleinknecht⁸ confirmed this finding and attributed it to widespread vasodilatation, possibly associated with inhibition of the heart. Bechterew³ stated that the heart is readily inhibited from the cortex, but subsequent investigators have had difficulty in obtaining the result and it would appear that very strong stimulation must be employed to achieve it. The relation of the vagal nuclei to the cortex obviously deserves further study.

The bladder, vagina, penis, rectal musculature and other quasi-autonomic organs also find representation in the cortex, which has long been recognized from the work of Leyton and Sherrington and others, and needs no especial comment. The cortical control of the pupils is also well recognized and is readily demonstrated by stimulation of the cortical eye fields. The relation to the cortex of other autonomic functions, such as gastric secretions and the secretion of the endocrine glands, are all problems for future study.

VII. DISCUSSION

Proof of the existence of autonomic representation in the cortex makes more intelligible the visceral concomitants of many reactions known to be integrated at the cortical level. Thus the prompt "psychic" secretion of saliva and gastric juice which occurs on sight of appetizing food or on hearing a familiar dinner-gong is clearly the outcome of a complex cortical integration, and the stimulus for active secretion must, I think, come directly from the cortex. The blush of embarrassment is similarly the direct outcome of more complex cortical integration. I have determined the latent period of the blush in a susceptible subject, and have found it to be not more than three seconds from the time of utterance of a

word to which the subject was prone to react. The exact time interval is perhaps of some significance, for it indicates that the vasomotor integration is probably simultaneous with the general cortical integration, the peripheral latency of vasodilatation being itself nearly three seconds. One can easily conceive that the vasomotor reactions essential for heat regulation may be governed entirely subcortically, for complex adaptive behavior of the organism is not materially benefited by alterations of temperature; but complex adaptive behavior is facilitated by the blush and by other specific reactions involving the autonomic system such as the anticipatory secretions: saliva, gastric juice, etc. To find that some, at least, of these specific responses are elicitable by direct stimulation of the cortex is highly illuminating, and it serves to emphasize the closeness of association between the somatic and the visceral functions of the body. It throws light, moreover, upon the vegetative disturbances which form so prominent a part of certain mental states and diseases, and it invites closer study on the part of the neurologist and the neurophysiologist of the vegetative concomitants of all lesions of the brain. Finally, if one be permitted to end on a more general note, I think the demonstration of autonomic representation of the cerebral cortex gives welcome and vivid testimony of the essential unity of the organism.

VIII. SUMMARY

The hypothalamic and medullary centers concerned in regulating visceral activities are held in check by centers lying rostrally in the forebrain. These higher centers, therefore, must also play a part in the regulation of visceral functions. The extent to which the cerebral cortex is involved has been briefly considered.

Bilateral extirpation of the premotor cortical areas of monkeys leads to great increase in peristaltic movements of the entire gut, which in certain cases has caused spontaneous intussusception with obstruction. Great augmentation in peristaltic movements may also be induced by faradic stimulation of the frontal lobes, and this disappears when the vagi are sectioned. Evidence is given indicating that both excitatory and inhibitory representation of the gut musculature is present in the frontal lobes.

Stimulation of the frontal region causes

widespread vasodilatation, with fall in blood pressure.⁸ Isolated removal of the premotor area of monkeys and chimpanzees causes increased sweating on the opposite side of the body with a fall in temperature which is probably independent of sudorific activity. If an animal with a premotor lesion is placed in a warm atmosphere, the normal extremities exhibit immediate reflex vasodilatation whereas the extremities opposite the lesion fail to do so. This indicates impairment of the reflex vasodilator mechanism.¹⁶

Salivation has been produced in monkeys by stimulation of area 6b and it occurs in man as a result of pathological lesions situated in this region.

The well recognized representation of the pupils, bladder and vaginal and anal musculature in the cerebral cortex is touched upon.

REFERENCES

1. BARD, P.: A diencephalic mechanism for the expression of rage with special reference to the sympathetic nervous system. *Amer. Jour. Physiol.*, 1928, 84:490-515.
2. BAZETT, A. C., ALPERS, B. J., and ERB, W. H.: Hypothalamus and temperature control. *Arch. Neurol. Psychiat.*, 1933, 30:728-748.
3. BECHTEREW, W. VON: Die Funktionen der Nerven-centra. Jena, 3 vols., 1911.
4. BENISTY (Madame): Les lésions de la zone Rolandique (zone motrice et zone sensitive) par blessures de guerre. Contribution à l'étude clinique des localisations cérébrales. Paris, Vigot Frères, 1918, 216 pp.
5. BRUHN, M. J.: The respiratory metabolism of infrahuman primates. *Amer. Jour. Physiol.*, 1934 (in press).
6. CANNON, W. B.: Some modern extensions of Beaumont's studies on Alexis St. Martin. Beaumont Foundation Lectures. Reprinted from the *Journal of the Michigan State Medical Society*, 1933, 87 pp. (*Jour. Mich. State Med. Soc.*, 1933, 22:155-164; 215-224; 307-316.)
7. CANNON, W. B.: Bodily changes in pain, hunger, fear and rage. New York, D. Appleton & Co., 1929, xviii, 404 pp.
8. DUSSE, DE BARENNE J. G., and KLEINKNECHT, F.: Über den Einfluss der Reizung der Grosshirnrinde auf den allgemeinen arteriellen Blutdruck. *Zeitschr. f. Biol.*, 1924, 82:13-20.
9. FOERSTER, O., and PENFIELD, W.: Der Narbenzug am und im Gehirn bei traumatischer Epilepsie in seiner Bedeutung für das Zustandekommen der Anfälle und für die therapeutische Bekämpfung derselben. *Zeitschr. ges. Neurol. Psychiat.*, 1930, 125:475-572.
10. FULTON, J. F., JACOBSEN, C. F., and KENNARD, MARGARET A.: A note concerning the relation of the frontal lobes to posture and forced grasping in monkeys. *Brain*, 1932, 55:524-536.
11. GOWERS, W. R.: A manual of diseases of the nervous system. 2 vols. London, J. & A. Churchill, 1888.
12. KAHN, E.: Demonstration präseniler Verblödungsprozesse. *Zentralbl. ges. Neurol. Psychiat.*, 1924, 40:733-735.
13. KARPLUS, J. P., and KREIDL, A.: Gehirn und Sympathicus. I. Zwischenhirnbasis und Halssympathicus. *Arch. ges. Physiol.*, 1909, 129:138.
14. KELLER, A. D.: Observations on the localization of the heat regulating mechanisms in the upper medulla and pons. *Amer. Jour. Physiol.*, 1930, 93:665 (Soc. Proc.).
15. KENNARD, MARGARET A., VIETS, H. R., and FULTON, J. F.: The syndrome of the premotor cortex in man: forced grasping, spasticity and vasomotor disturbance. *Brain*, 1934 (in press).
16. KENNARD, MARGARET A.: Vasomotor representation in the cerebral cortex. *Science*, 1934, 79 (in press).
17. LEWANDOWSKY, W., and WEBER, E.: Hirnrinde und Blutdruck. *Med. Klin.* 1906, 2:385.
18. OTT, S., and FIELD, G. B. W.: A new function of the optic thalami. *Jour. Nerv. Ment. Dis.*, 1879, 6:654-657.
19. PAGET, S.: On cases of voracious hunger and thirst from injury or disease of the brain. *Trans. Clin. Soc., Lond.*, 1897, 30:113-119.

20. PATTERSON, T. L.: Comparative physiology of the gastric hunger mechanism. *Ann. N. Y. Acad. Sci.*, 1933, 34:55-284. See also:
PATTERSON, T. L., and RUBRIGHT, L. W.: The influence of tonal conditions on the muscular response of the monkey's stomach. *Quart. Jour. Physiol.*, 1934, 24:3-21.
- ILLENDEN, JESSIE, PATTERSON, T. L., RUBRIGHT, L. W., and SCOTT, R. J.: The physiology of gastric hunger contractions in the Javanese monkey. *Quart. Jour. Physiol.*, 1934, 24:55-68.
21. ROSSOLIMO, G.: Zur Symptomatologie und chirurgischen Behandlung einer eigenthümlichen Grosshirncyste. *Deutsch. Zeitschr. Nervenh.*, 1895, 6:76-94.
22. SHEEHAN, D., and BEATTIE, J.: The effects of hypothalamic stimulation on gastric motility. *Jour. Physiol.*, 1934 (in press).
23. SOLLIER, P., and DELAGENIERE, H.: Le centre cortical des fonctions de l'estomac d'après un cas d'abcès du cerveau d'origine traumatique. *Rev. Neurol.*, 1901, 9: 1103-1106.
24. WATTS, J. W., and FULTON, J. F.: Intussusception—the relation of the cerebral cortex to intestinal motility in the monkey (to appear).
25. WEISS, S., and ELLIS, L. B.: The circulatory mechanism and unilateral edema in cerebral hemiplegia. *Jour. Clin. Invest.*, 1931, 9:17-18 (Soc. Proc.).

SOME BASIC PRINCIPLES IN THE TREATMENT OF HEART FAILURE*

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The treatment of cardiac failure becomes more and more interesting as our knowledge of the pathological physiology broadens and our insight into the rationale and basic principles of treatment increases. Information concerning these principles has, during the last few years, appeared from many different angles. It is the purpose of this paper to present some of the more important of these findings and discuss them in relation to their application in everyday practice. Before doing this it would be well to briefly discuss the pathological physiology of cardiac failure.

PATHOLOGIC PHYSIOLOGY OF CARDIAC FAILURE

Cardiac failure is now generally believed to be due to decreased cardiac output¹⁷ resulting from weakened ventricular contractions. Functionally the heart becomes unable adequately to pump blood from the venous to the arterial side of the circulatory system. This insufficiency produces an increased venous pressure contributing to cardiac dilatation centrally and congestion cyanosis and edema peripherally. Reserve capillaries are opened early in an endeavor to compensate for a decrease in the volume flow of blood while other arterioles and capillaries reflexly contract to prevent an injurious fall of blood pressure or a slowing of the circulatory rate. Finally as cardiac weakness progresses the clinical symptoms of heart failure are manifested. Broadly speaking they can be considered the result of tissue anoxemia and venous and capillary congestion.

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In the lungs because of the congestion and edema there is a thickening and stiffening of the alveolar walls, hindering the exchange of gases between the atmosphere and the blood and contributing to the early finding of reduced pulmonary volume and decreased vital capacity. Nervous reflexes arising in the lungs and later the accumulation of lactic acid and carbon dioxide stimulate the respiratory center, causing dyspnea. Dyspnea in turn causes an increased pulmonary ventilation often doubling the amount of inspired air.¹⁹ As a result of the increased ventilation the oxygen saturation of the blood is low while the CO₂ and lactic acid content remains high.²⁰ This is partially compensated for by a greater utilization of oxygen by the tissues as shown by an increased arterio-venous oxygen difference.^{42, 43} In the tissues, as a result of the anoxemia, certain metabolic changes occur which are manifested by a disturbance of the acid base equilibrium. Early this is aggravated by upset kidney function, the result of congestion, and later by the accumulation of lactic acid which has failed to be oxidized to carbon dioxide and water or converted into blood glucose. These metabolic disturbances decrease further the functional capacity of the heart muscle so that with advancement in failure a vicious circle is established. While the metabolism of cardiac muscle is

not thoroughly understood it is well established that certain metabolites such as lactic acid, creatine and phosphates are formed during systole and that normally they are oxidized or reconverted into glycogen and phosphagen during diastole. This process, from a dynamic standpoint, furnishes a means for the heart to recover the energy during diastole which it has expended during the previous systole. But, in the presence of heart failure this sequence of events is not completed, metabolites are allowed to accumulate, which means that the expended energy has not been fully recovered and that myocardial weakness is gradually increasing.

With this sketchy account of the pathological physiology of cardiac failure in mind let us focus our attention on means of combating these functional disturbances. Obviously our therapeutic efforts should center around two main principles. First, attempts should be made to restore to normal the lowered cardiac output, and, secondly, the demands on the heart should be reduced to a minimum.

MEASURES INTENDED TO INCREASE THE CARDIAC OUTPUT

Many factors active in increasing the cardiac output are susceptible to outside influences. While closely related and interdependent they can, broadly speaking, be grouped under two general heads: first, those processes considered to be of a metabolic nature and, secondly, those more properly thought of as mechanical.

1. *Metabolic Factors*

Any discussion of the metabolic processes will necessitate a separate consideration of the important factors concerned, remembering, at the same time, that all these processes are closely related. It has been pointed out that in the normal heart the accumulated metabolites are removed during diastole. In the failing heart this recovery process is slowed. Prolongation of the diastolic period may then furnish sufficient time for complete recovery. This can be accomplished by bodily rest and the administration of various régimes selected according to the special features presented. The effect of prolonging the diastolic period can be enhanced by anything which will aid in the completion of the metabolic processes occurring normally during that period.

(a) *Oxygen Requirement.*—Of the meta-

bolic factors concerned, oxygen occupies a most prominent position. Meakins and G. T. Evans²⁸ working with rats found it impossible, in the presence of an adequate oxygen supply, to reduce the glycogen content of cardiac muscle by severe exercise. In the presence of anoxemia, however, the glycogen content was easily depleted. Peters and Barr,³¹ Meakins and Long²⁹ and Katz and Long²³ have shown that there is a rapid accumulation of lactic acid in the muscles and circulating blood whenever the oxygen supply is deficient. Katz and Long showed further that mammalian heart muscle is relatively intolerant to lactic acid, becoming exhausted at concentrations of .072 Gms. per cent, whereas skeletal muscle is able to withstand lactic acid accumulation up to .252 Gms. per cent. Hill²² has demonstrated that the oxidation of lactic acid resulting from muscular activity depends upon the oxygen supply to the tissues. Whenever this is deficient an oxygen debt ensues and lactic acid accumulates in the muscles. Redfield and Medearis³³ have shown that the ability of the turtle's heart muscle to develop tension is inversely proportional to the lactic acid content of the muscle fibres. Meakins and Long²⁹ showed that cardiac failure patients have a maximum oxygen utilization lower than normal and therefore start to build up an oxygen debt sooner than normal. These same authors believe that the lactic acid increases with advancement in the cardiac failure so that in any given case it is proportional to the severity of the failure present. Finally, Katz and Long²³ have shown that dilatation and failure soon result after a reduction in the oxygen supply to the heart muscle. These observations emphasize the important rôle played by oxygen in the metabolism of cardiac muscle and suggest the possibility of obtaining beneficial effects from an atmosphere having a high oxygen concentration. In 1921 Barach and Woodwell³ demonstrated that the low oxygen saturation of the blood in cardiac failure could be raised to normal by the inhalation of an atmosphere containing 40 to 60 per cent oxygen. Barach and Richards, Jr.,⁴ demonstrated in 1931 the beneficial effect obtained in cardiac failure patients placed in an atmosphere of 40 to 60 per cent oxygen. They observed a rise in the arterial oxygen saturation to normal, a decrease in pulmonary ventilation and a decrease in the accumulation of acids in the tissues. These changes

were accompanied by clinical improvement manifested by lessened dyspnea cyanosis and edema. Increased oxygen concentrations are best obtained by the use of an oxygen room, but where this is impossible the oxygen tent or the oxygen tank with funnel or nasal catheters afford good substitutes.

(b) *Carbohydrate Requirement.*—While our knowledge of the chemical details of carbohydrate metabolism is not complete, it is well established that the source of energy for muscular contraction is closely related to the breakdown of phosphagen into creatine and phosphate and of glycogen into lactic acid. Part of the lactic acid, about one fourth, is oxidized into carbon dioxide and water; the remainder is carried to the liver, where it is rebuilt to glycogen, which is later discharged into the blood as glucose and carried to the heart muscle for resynthesis into muscle glycogen.^{10, 24, 26} In this way glucose is conserved for use by the muscles. Experimentally its importance can be demonstrated by the production of hypoglycemia in diabetics with heart disease. This procedure, accomplished by the use of insulin and low carbohydrate diets, has frequently caused clinical and electrocardiographic evidence of cardiac damage which could be relieved by glucose administration.⁴⁴

Edmunds and Cooper¹² in 1925 obtained beneficial results from the intravenous administration of 10 per cent glucose to dogs suffering from cardiac failure due to diphtheria toxins. The observations of Fred Smith³⁶ lead him to conclude that patients with congestive failure require less digitalis and improve more rapidly when a plentiful supply of carbohydrate is administered. Where possible it seems better to supply glucose by means of a high carbohydrate diet so that its gradual absorption and diffusion will allow the maintenance of a high glucose content in the blood and tissues without radical adjustments of the blood volume. When the intravenous route is necessary small amounts of hypertonic glucose solutions, 25 to 50 per cent, probably require less rapid adjustments of the blood volume than larger amounts of a less concentrated solution.

(c) *Quality of Circulating Blood.*—The advantage gained by the administration of high concentrations of oxygen and carbohydrate is partially neutralized by any conditions which decrease the capacity of the

blood to act as a transportation medium for these substances. Normal individuals living at or near sea level have an almost constant amount of hemoglobin. This together with a normal cardiac output adequately feeds and ventilates the tissues. If anemia is present, however, the oxygen-carrying capacity of the blood is decreased so that compensatory adjustments become necessary. These adjustments are accomplished largely by increasing the cardiac output. Dautrebande¹¹ showed that a fifty per cent reduction of hemoglobin caused a compensatory increase in cardiac output and that reductions below this level were accompanied by a further proportional increase. Herrick and Nuzum²⁰ and Herrick²¹ pointed out the association of angina pectoris with severe anemia and concluded that it is due to myocardial anoxemia secondary to the anemia. Its frequency in pernicious anemia and its disappearance following liver therapy is now a common observation. It seems important therefore to combat any existing anemia. This can best be accomplished by appropriate treatment of infections, the administration of iron or liver extract or in some cases by the performance of blood transfusion.

General anemia, however, is only part of the problem. From our knowledge of the coronary circulation we know that pathological changes or spasm or both may cause anemia of the heart muscle, thus impairing its function. Many studies of the physiological and pharmacological influences on coronary flow have been made. In 1926 Smith, Miller and Graber³⁷ showed that the rate of coronary flow is a direct function of the blood pressure, especially the diastolic pressure. Later Smith³⁴ showed that the rate of coronary flow, within certain limits, is directly proportional to the cardiac rate. His^{34, 35} observations concerning the influence of certain drugs indicate that the nitrites, euphylline and theophylline are most effective in increasing coronary flow while caffeine sodio-benzoate and theobromine sodio-salicylate have little, if any, similar action. Gilbert and Fenn,¹⁴ working with the intact animal, concluded that the order in point of efficacy of these drugs is, first, theobromine and its salts, second euphylline, thirdly theophylline sodium acetate and lastly caffeine. The clinical results reported by Marvin²⁷ and Gilbert and Kerr¹⁵ indicate that the action of these drugs is similar in humans to that found by Smith and Gilbert

and Fenn in experimental animals. From a therapeutic standpoint these authors emphasize the fact that good results are much more consistently obtained in the arteriosclerotic and hypertensive cases than in those where rheumatic fever or syphilis form the etiological background.

2. Mechanical Factors

(a) *Arrhythmias*.—In consideration of the mechanical factors concerned, the arrhythmias suggest a mechanical defect likely to cause a decreased cardiac output. Stewart, Crawford and Hastings,⁴¹ working with dogs, found a decrease in cardiac output when auricular fibrillation was produced artificially. Smith, Walker and Alt³⁸ determined the cardiac output of patients during and after irregularities due to auricular fibrillation and extrasystoles. Two patients showed an increase of 25 per cent in the cardiac output after auricular fibrillation had been abolished. One of these patients showed the same cardiac output when the arrhythmia was due to extrasystoles as when due to auricular fibrillation. Restoration of normal rhythm was accompanied by an increase of twenty-nine per cent in the cardiac output. Three patients with complete heart block were studied by these authors and found to have a normal output while at rest. Barcroft, Boch and Rough-ton⁵ observed a marked decrease in cardiac output during an attack of paroxysmal tachycardia in a patient otherwise normal. These findings emphasize the importance of correcting arrhythmias unless contraindications prevent.

(b) *Myocardial Tonicity*.—As long as heart muscle tone remains normal, dilatation is confined to physiological limits. It then occurs as a result of increased demands and makes possible an increase in the ventricular output. The almost constant association of cardiac dilatation with congestive failure is *prima facie* evidence of decreased myocardial tonicity. Under such conditions abnormal dilatation occurs, the ventricles are overfilled and complete emptying does not occur. That such a heart is inefficient has been proven by Visscher and Starling,³⁹ who, by means of oxygen consumption studies, were able to demonstrate that cardiac efficiency decreases as the diastolic volume increases. Under these conditions a cardiac tonic such as digitalis is definitely indicated. The beneficial action of this drug is now generally be-

lieved to be closely connected with the resulting decrease in dilatation. The exacting measurements performed by Richard Bodo⁹ have shown that digitalization not only decreases the diastolic volume of the failing heart but enables it to do the same amount of work at this smaller volume. This, as Visscher and Starling³⁹ have shown, means that the heart is working with greater efficiency. Finally the cardiac output measurements recently made by Stewart and Cohn⁴⁰ show that digitalis actually increases the cardiac output in such patients.

The possibility of cardiac dilatation being increased by high venous pressure and increased blood volume seems worthy of consideration. As yet blood volume measurements in cardiac failure can hardly be considered accurate but the accumulated evidence seems to indicate that it gradually increases as cardiac failure advances. Assuming both these factors to be contributory, one would expect venesection to aid in diminishing the dilatation present.

For years venesection was popular in the treatment of cardiac failure. That it failed to improve many cases accounts for its diminished use during the last several years. The observations of Eyster and Middleton,¹³ Gordon¹⁶ and Meek and Eyster³⁰ show that patients with high venous pressures frequently improve after venesection. Whenever improvement occurred it was accompanied by a lowered venous pressure and a decrease in the size of the heart.

It seems safe then to conclude that impaired muscle tone, as manifested by abnormal dilatation, is the direct cause of decreased cardiac efficiency and that it can be combated by digitalis and in selected cases by venesection.

(c) *Pulmonary Ventilation*.—Certain mechanical factors are useful in combating the lowered vital capacity. The semi-Fowler's position allows a greater diaphragmatic excursion and the vertical position of the lungs causes the edema and congestion to be confined to the bases. For the same reason the better venous return from the brain improves the circulation through the respiratory center, thus decreasing dyspnea and contributing to the comfort of the patient. Frequently the vital capacity is depressed by the accumulation of fluid in the pleural and abdominal cavities. Paracentesis then becomes an effective measure in improving pulmonary efficiency.

MEASURES DESIGNED TO DECREASE THE DEMANDS ON THE HEART

Measures intended to reduce cardiac work may be thought of as playing an important rôle in the prevention as well as the cure of cardiac failure. While they are of value in the former they can nevertheless be used to advantage in the latter, especially if

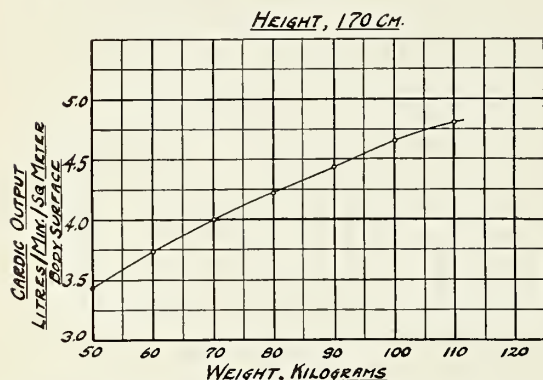


Fig. 1. Curve showing the computed cardiac output values accompanying weight increases in an individual of constant height.

a lengthy period is required to obtain satisfactory cardiac response. That absolute rest in bed is of major importance is emphasized by the work of Grollman,¹⁷ who has shown that moderate amounts of work often quadruple the cardiac output in normal persons. The investigations of Bansi and Groscurth² show that the cardiac output in failure is less at rest than normal and that it does not increase normally with increased muscular exertion. They have shown further that after exercise the output is maintained above its resting level longer than is the case with normal persons.

(a) *Obesity*.—Since Laennec in 1831 described the “fatty heart” as a clinical entity there has been much controversy concerning the effect of fatty deposits in and between the heart muscle fibres and the relation of such deposits to general obesity. Recently Prodger and Dennig³² made observations upon the functional integrity of the cardiac output and related circulatory functions in obese patients otherwise normal. By comparing these findings with like measurements in normal persons, showing no tendency to obesity, they found that the obese differed from the others in several ways but because of the normal cardiac output and arteriovenous oxygen difference these investigators concluded that the symptoms so frequently associated with simple obesity are

not due to insufficiency of the circulatory system.

Grollman's¹⁷ studies have shown, however, that normal individuals under basal conditions have a cardiac output proportional to the surface area. This value he has called the cardiac index and finds it to be $2.2 \pm .3$ litres per minute per square meter of body surface. In other words, an increase of one square meter in body surface requires an increase in cardiac output of 2.2 litres per minute. This effect may be better appreciated by reference to the curve shown in Figure 1, in which the cardiac output of a patient of constant height is computed for each increase in body surface resulting from gains of 10 Kgms. in body weight.

In the absence of cardiac failure or advanced cardiac pathology the increased cardiac work occasioned by obesity is probably of little or no significance. But where mild or advanced cardiac failure is present obesity is a factor of undoubted importance and should be combated in order to decrease demands on the heart.

(b) *Metabolic Rate*.—Grollman¹⁷ and Blumgart, Gargill and Gilligan⁶ have shown the cardiac output and the rate of blood flow to be proportional to the height of the metabolic rate. Any reduction, then, in the rate of metabolism will proportionately reduce the demands on the heart; this factor, to a great extent, accounts for the disappearance of heart failure in thyrotoxic patients following thyroidectomy. Recently Levine and Blumgart^{7,8} and their coworkers have observed the effect of removal of the normal thyroid gland in intractable cases of cardiac failure. Their results seem very encouraging. Further observations on their treated cases will be most valuable in fully appreciating the merits of this procedure.

(c) *Edema*.—The edema of cardiac failure is due to increased filtration of fluid through the capillary walls into the surrounding tissues. The rate of filtration is known to be proportional to the height of the venous pressure above the osmotic pressure of the plasma proteins. Landis²⁵ demonstrated that the permeability of frogs' capillary walls could be increased by reduction of their oxygen supply. He states: “This effect of oxygen lack is of interest since it seems probable that the edema of cardiac decompensation cannot be explained purely in terms of capillary pressure.”

The effect of edema *per se* on the circula-

tion is little understood. Many have assumed that the swollen tissues obstruct the flow of blood through the capillaries. The work of Harrison and Pilcher¹⁸ along this line is interesting. These investigators found the arterio-venous oxygen difference in edematous extremities to be decreased in direct proportion to the amount of edema present. They believe these findings can be accounted for only by an increased volume flow of blood through the edematous extremities. This they attribute to a widening of the capillary bed in response to stimulation arising as a result of anoxemia of the tissues involved. They reason that such an increased flow necessitates an increased cardiac output and therefore delays recovery. Whether one assumes that edema acts as an obstructing agent or as a stimulant to increased blood flow, it seems logical to direct treatment toward its removal. If digitalization and bed rest have produced only partial reduction of the edema the administration of diuretics or the use of a neutral diet and ammonium chloride is frequently followed by reduction of edema and further improvement in the patient's condition.

(d) *Diet*.—The mechanical adjustments provoked by the intake of food have been studied by Grollman¹⁷ and others. The increased cardiac output found is variable, being modified chiefly by the bulk of the meal, large meals causing a greater and more prolonged increase in cardiac output than small ones. Aperia and Carlens¹ studied the influence of proteins, fats and carbohydrates taken separately. They concluded that protein caused the highest and most prolonged rise in cardiac output. Fat and carbohydrates were compared in isodynamic quantities, the former requiring a lower total cardiac output than did the latter. The ingestion of fluids has long been known to cause definite circulatory adjustment. When large quantities of water are ingested (2 litres in 15 minutes) diuresis starts promptly, the urinary output rising as high as 122 c.c. per hour. This prompt adjustment prevents any appreciable dilution of the blood so that a constant blood volume is maintained. If, on the other hand, similar quantities of normal saline are taken, the urinary output is only slightly increased during the succeeding twenty-four hours. The hemoglobin concentration may fall by 10 per cent during this period, indicating that dilution of the blood proteins and increase in the

blood volume has occurred. These reactions are of greater interest when compared with the results of cardiac output measurements made by Grollman.¹⁷ He found that the taking of fluids by mouth definitely increased the cardiac output. The ingestion of isotonic salt solution and Locke's solution caused a more marked increase than did water. This he concluded was due to a state of plethora in the vascular system resulting from the rapid absorption and prolonged retention of isotonic solutions in the blood stream. These, together with observations previously mentioned, indicate that the cardiac failure patient should have a concentrated diet, rather low in protein, high in carbohydrate and having a caloric content arranged to correct any abnormalities in weight.

CONCLUSION

Certain therapeutic procedures have been presented from the standpoint of the physiological principles involved. Many of these principles are still theoretical and questionable. In such cases the final word can only be spoken after thorough analysis in the laboratory of clinical and experimental observation:

BIBLIOGRAPHY

1. Aperia, A., and Carlens, E.: Quoted by Grollman: Cardiac output in health and disease, p. 99.
2. Bansil, H. W., and Groscurth, G.: Quoted by Grollman: Cardiac output in health and disease, p. 225.
3. Barach, A. L., and Woodwell, M. N.: Studies in oxygen therapy with determination of blood gases: I. In cardiac insufficiency and related conditions. *Arch. Int. Med.*, 28:367.
4. Barach, A. L., and Richards, D. W., Jr.: Effects of treatment with oxygen in cardiac failure. *Arch. Int. Med.*, 48:325.
5. Barcroft, H., Bock, A. V., and Roughton, F. J.: Observations on the circulation and respiration in a case of paroxysmal tachycardia. *Heart*, 9:7.
6. Blumgart, H. L., Gargill, S. L., and Gilligan, D. R.: Studies on the velocity of blood flow: XIII. The circulatory response to thyrotoxicosis. *Jour. Clin. Invest.*, 9:69.
7. Blumgart, H. L., Levine, S. A., and Berlin, D. D.: Congestive heart failure and angina pectoris. *Arch. Int. Med.*, 51:866.
8. Blumgart, H. L., Riseman, J. E. F., Davis, D., and Berlin, D. D.: Therapeutic effect of total ablation of normal thyroid on congestive heart failure and angina pectoris. *Arch. Int. Med.*, 52:165.
9. Bodo, Richard: The effect of heart tonics and other drugs upon the heart-tone and coronary circulation. *Jour. Physiol.*, 64:365.
10. Cruickshank, E. W. H.: The effect of insulin on the utilization of sugar in the normal and diabetic heart. *Am. Jour. Physiol.*, 90:322.
11. Dautrebande, L.: Quoted by Grollman: Cardiac output in health and disease, p. 237.
12. Edmunds, C. W., and Cooper, R. G.: Action of cardiac stimulants in circulatory failure due to diphtheria. *Jour. A. M. A.*, 85:1798.
13. Eyster, J. A. E., and Middleton, W. S.: Clinical studies on venous pressure. *Arch. Int. Med.*, 34:228.
14. Gilbert, N. C., and Fenn, G. K.: The effect of the purine base diuretics on the coronary flow. *Arch. Int. Med.*, 44:118.
15. Gilbert, N. C., and Kerr, J. A.: Clinical results in the treatment of angina pectoris with the purine base diuretics. *Jour. A. M. A.*, 92:201.
16. Gordon, B.: The value of venesection in the treatment of the decompensated heart. *Am. Jour. Med. Sc.*, 170:671.

17. Grollman, Arthur: The cardiac output of man in health and disease. Charles C. Thomas, Baltimore, Md.
18. Harrison, T. R., and Pilcher, C.: Studies in congestive heart failure. I. The effect of edema on oxygen utilization. *Jour. Clin. Invest.*, 8:259.
19. Harrison, T. R., and Pilcher, Cobb: Studies in congestive heart failure. II. The respiratory exchange during and after exercise. *Jour. Clin. Invest.*, 1930, 8:291.
20. Herrick, J. B., and Nuzum, F. R.: Angina pectoris, clinical experience with two hundred cases. *Jour. A. M. A.*, 70:67.
21. Herrick, J. B.: On the combination of angina pectoris and severe anemia. *Am. Heart Jour.*, 2:351.
22. Hill, A. V.: Muscular Activity. Herter Lectures, Baltimore, 1924.
23. Katz, L. N., and Long, C. N. H.: Lactic acid in mammalian cardiac muscle. Part I. The stimulation maximum. *Proc. Roy. Soc., Series B*, 1925-26, 99:8-20.
24. Knowlton, F. P., and Starling, E. H.: Experiments on the consumption of sugar in the normal and the diabetic heart. *Jour. Physiol.*, 45:146.
25. Landis, Eugene M.: Micro-injection studies of capillary permeability. The effect of lack of oxygen on the permeability of the capillary wall to fluid and the plasma proteins. *Am. Jour. Physiol.*, 83:528.
26. MacLean, Hugh, and Smedley, Ida: The behavior of the diabetic heart towards sugar. *Jour. Physiol.*, 45: 470.
27. Marvin, H. M.: The value of the xanthine diuretics in congestive heart failure. *Jour. A. M. A.*, 87:2043.
28. Meakins, J. C.: Modern muscle physiology and circulatory failure. *Ann. Int. Med.*, 6:506.
29. Meakins, Jonathan, and Long, C. N. H.: Oxygen consumption, oxygen debt and lactic acid in circulatory failure. *Jour. Clin. Invest.*, 4:273.
30. Meek, W. J., and Eyster, J. A. E.: Reactions to hemorrhage. *Am. Jour. Physiol.*, 56:1.
31. Peters, J. P., Jr., and Barr, D. P.: Carbon dioxide curve and carbon dioxide tension of blood in cardiac dyspnea. *Jour. Bio. Chem.*, 45:537.
32. Prodder, S. H., and Dennig, H.: A study of the circulation in obesity. *Jour. Clin. Invest.*, 11:789.
33. Redfield, A. C., and Medearis, D. N.: The content of lactic acid and the development of tension in cardiac muscle. *Am. Jour. Physiol.*, 77:662.
34. Smith, F. M.: The coronary circulation. *Arch. Int. Med.*, 40:281.
35. Smith, F. M.: The action of nitrites on the coronary circulation. *Arch. Int. Med.*, 28:837.
36. Smith, F. M., Gibson, R. B., and Ross, N. G.: The diet in the treatment of cardiac failure. *Jour. A. M. A.*, 88:1943.
37. Smith, F. M., Miller, G. H., and Graber, V. C.: The effect of caffeine sodio-benzoate, theobromine sodio-salicylate, theophyllin and euphyllin on the coronary flow and cardiac action in the rabbit. *Jour. Clin. Invest.*, 2:157.
38. Smith, W. C., Walker, G. L., and Alt, H. L.: The cardiac output in complete heart block, auricular fibrillation before and after the restoration of normal rhythm, subacute rheumatic fever, and chronic rheumatic valvular disease. *Arch. Int. Med.*, 45:706.
39. Starling, E. H., and Visscher, M. B.: The regulation of the energy output of the heart. *Jour. Physiol.*, 62:243.
40. Stewart, Harold J., and Cohn, Alfred E.: Studies on the effect of the action of digitalis on the output of blood from the heart. *Jour. Clin. Invest.*, 11:917.
41. Stewart, H. J., Crawford, J. H., and Hastings, A. B.: The effect of tachycardia on the blood flow in dogs. *Jour. Clin. Invest.*, 3:435.
42. Wiggers, C. J.: Circulation in health and disease. p. 567. Lea and Febiger, Philadelphia, Pa.
43. Wright, Samson: Applied physiology. p. 367. Oxford University Press, London.
44. Yater, W. M., Markowitz, J., and Cahoon, R. F.: Consumption of blood sugar by muscle in the non-diabetic and in the diabetic state. *Arch. Int. Med.*, 51:800.

COMPARATIVE RESULTS OF TREATMENT OF SEVENTY CASES OF HYPERTENSION WITH LIVER EXTRACT, DIATHERMY, AND DRUGS*

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Heidenhain⁸ in 1891 was the first to show a reduction in hypertension by the use of organ extracts and among others that of liver. Since this time many reports have been made bearing on this subject. Major¹⁴ found that liver extract lowered both the systolic and diastolic pressures, in some cases as much as 50 millimeters of mercury. No untoward effects from its administration were encountered by him. McDonald¹¹ accidentally discovered that liver extract lowered blood pressure while giving it to patients with carcinoma. He¹² also found that discontinuing the extract resulted in the blood pressure becoming elevated again and that cases of essential hypertension responded best. Al-
 trausen¹ and others discovered that, although the extract lowered blood pressure, the symptomatic relief was not necessarily proportional to the degree of fall or even present in some instances. Experimental data have been supplied by James and Laughton⁹ to show that extracts of liver reduce hypertension in dogs and this reduction may be maintained over long periods of time.

Granger⁷ reports considerable success in the treatment of hypertension with the use

of the high frequency current. He found that the effect was upon the sympathetic nervous system, resulting in increased urea output, decrease of uric acid, increased output of carbon dioxide and, locally, a superficial analgesia. Believing that with increased resistance the heart must necessarily work harder, increasing the metabolism of the body generally will lower the pressure. The presence of an advanced stage of parenchymatous nephritis, where hypertension is necessary for the proper elimination of urine, he contends is a contraindication to the use of diathermy. Of the different

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types of high frequency used he found auto-conduction to be the most effective.

Among other substances and methods that have been employed with varying degrees of success are sulphocyanate of soda by Smith and Rudolph²⁰ and Berg⁵; Ergotamine Tartrate, Ergotamine and Acetylcholine combined and sodium sulphocyanate by Meakins and Scriver;¹⁶ potassium thiocyanate by Fineberg;⁶ potassium sulphocyanate by Maquire;¹⁵ potassium bromide and potassium chloride by Allison;² calcium chloride by Allison and Clark;³ and the potassium ion by Priddle.¹⁸ The use of nitroglycerin has been found by Zeiss and Brams²³ to lower the systolic pressure in three cases and diastolic in six cases but caused an actual elevation in six other cases. Wallace and Ringer²¹ report only a temporary fall of blood pressure by the use of nitroglycerin. Mistletoe,¹⁷ corpus luteum,¹⁹ subtonin,¹⁰ watermelon extract,²² benzyl benzoate¹³ have also been used. Ayman⁴ found a few drops of dilute hydrochloric acid given daily were about as efficacious as any other drug used and concluded that serious and enthusiastic treatment is the main factor in the therapy. This author suggests that the condition of essential hypertension may be one of a vegetative neurosis.

During a period of three years a group comprising seventy cases of hypertension has been studied. All patients having a systolic pressure of 150 or over and a diastolic pressure of 100 or over were considered cases of hypertension. The ages have ranged from twenty-five to seventy-nine years, the average being 55.2 years. Seventy-eight per cent of the patients were between 40 and 69 years of age, 11 per cent were over 69 years, and 12 per cent were under the age of forty. Average duration of observation has been 10.5 months, although some cases have been under treatment for three years or longer. Sixty patients were females and ten males. These patients have not been limited to those suffering from so-called essential hypertension. However, an effort has been made to classify them according to their complications. They have been seen for the most part in routine office and hospital practice.

The group of seventy has been divided into three classes. Since hypertension has been thought by many to be a vegetative neurosis and, therefore, that the beneficial results from any form of therapy could be

ascribed to suggestion, it was deemed best to prescribe the usual measures of general hygiene and low-protein, low-salt diet and to administer the usual sedatives and nitrites to all patients. Thus the element of suggestion could largely be ruled out and the group receiving drugs alone would serve as an excellent control. Consequently, twenty-seven patients were treated with drugs alone, thirty-four were given in addition hypodermics of liver extract, and in eighteen other cases diathermy was instituted in addition to drugs.

The drugs administered to Group I consisted of sedatives, nitroglycerin and digitalis when indicated. The ages ranged from thirty to seventy-nine, with an average of fifty-four. There were twenty-six females to one male. Average time of observation was seven months. Average systolic blood pressure was 181 and diastolic 101 before treatment. After treatment was instituted average systolic was 166 and diastolic 98. This represented an average systolic reduction of 15 points and diastolic of 3. Eleven (40 per cent) were completely relieved of their symptoms, six (25 per cent) were partially relieved, seven (25 per cent) showed no relief. Three (11 per cent) were asymptomatic before treatment.

Group II, consisting of thirty-four cases, comprises those cases that have also been given liver extract. Each cubic centimeter dose of the preparation used represented 25 grains of fresh liver substance. It has been customary in the majority of the cases to start with the injection of one cubic centimeter of the extract three times a week for a period of two weeks, then two injections a week for several weeks, and after that one injection a week for a long period. Injections were given intramuscularly. Ages in this group ranged from twenty-five to seventy-four, average fifty-three. There were twenty-eight females and six males. Average time of observation was nine months. Average systolic pressure was 204 and diastolic 116 before treatment. After treatment average systolic was 180 and diastolic 107, representing average systolic reduction of 24 and diastolic of 9. Nineteen cases (55 per cent) were completely relieved, eight (23 per cent) partially relieved, four (11 per cent) experienced no relief, and one (2 per cent) was worse; two (5 per cent) were asymptomatic. There were no untoward reactions to the treatment except

CHART I. TABLE SHOWING GENERAL RESULTS

Type of Therapy	Av. Syst. Before	Av. Syst. After	Av. Syst. Reduction	Av. Diast. Before	Av. Diast. After	Av. Diast. Reduction	Cases	Com-pletely Relieved
GROUP I Drugs	181	166	15	101	98	3	27	40%
GROUP II Liver Extract	204	180	24	116	107	4	34	55%
GROUP III Diathermy	192	189	3	111	103	8	18	22%

CHART II. TABLE SHOWING SYMPTOMATIC RELIEF OBTAINED

Type of Therapy	No. of Cases	Completely Relieved	Partially Relieved	Not Relieved	Made Worse	Asymptomatic
Liver Extract Therapy	34	19 (55%)	8 (23%)	4 (11%)	1 (2%)	2 (5%)
Drug Therapy	27	11 (40%)	6 (22%)	7 (25%)	0 (0%)	3 (11%)
Diathermy Therapy	18	4 (22%)	5 (27%)	8 (44%)	1 (5%)	0 (0%)

CHART III. TABLE SHOWING INFLUENCE OF CARDIO-RENAL COMPLICATIONS UPON SYMPTOMATIC RELIEF OBTAINED

Presence or absence of organic changes	LIVER EXTRACT THERAPY			DRUG THERAPY			DIATHERMY THERAPY		
	Complete relief	Partial relief	No relief	Complete relief	Partial relief	No relief	Complete Relief	Partial relief	No relief
Cardio-Renal	5 (38%)	3 (23%)	5 (33%)	3 (33%)	3 (33%)	3 (33%)	1 (16%)	1 (16%)	4 (66%)
None	14 (70%)	4 (20%)	2 (10%)	8 (53%)	3 (20%)	4 (36%)	3 (25%)	4 (33%)	5 (41%)

for a slightly sore arm for several days after the injection. Many patients were apparently relieved after the first injection. Several interesting phenomena were noted during period of observation. In Case 11 there was a drop of from 230 to 150 systolic and 140 to 100 diastolic after treatment for three months. Case 14 dropped from 206 to 154 systolic and 110 to 90 diastolic over a period of three years. After cessation of treatment for five months systolic increased to 220 and diastolic 120. In Case 25 after one injection there was a drop of 30 points in systolic pressure and an increase of 10 points in diastolic with symptomatic relief. Pressure gradually increased again with return of symptoms. In Case 27 there was a drop of 50 points systolic and 43 diastolic after one injection, with a final drop of 32 points systolic and 55 points diastolic and with only partial symptomatic relief. Case 30 showed a drop of 60 points systolic and 10 diastolic over a period of five weeks. Several other cases showed similar drops.

Eighteen cases made up the group that received diathermy. The ages ranged from fifty to seventy-one, average fifty-eight, of which sixteen were females and two males. Average time under observation was sixteen months. Average systolic pressure was 192 and diastolic 111 before treatment. After treatment systolic was 189 and diastolic 103. Average reduction in systolic pressure was 3 and diastolic 8. Four cases (22 per cent) were completely relieved, five (27 per cent) partially relieved, and eight (44 per cent) experienced no relief. One (5 per cent) was worse. None of these cases was asymptomatic before treatment.

DISCUSSION

Of the three groups of cases studied, the one receiving liver extract showed the most marked improvement. In Group I the average drop in systolic and diastolic pressures was 15 and 3 respectively. In Group II, 24 and 9, and in Group III, 3 and 8. In Group I 40 per cent received complete relief of symptoms as compared with 55 per cent in Group II and 22 per cent in Group III. The percentage of those partially relieved were 22, 23, and 27 in the three respective groups. However, seven (25 per cent) in Group I, four (11 per cent) in Group II, and eight (44 per cent) in Group III received no relief.

Many interesting observations and deductions have been made from a study of these patients. The two most common symptoms complained of were headaches and dizziness, the former occurring in 55 per cent of the cases and the latter 31 per cent. Other symptoms complained of were rapid pulse, heartburn, nosebleed, precordial pain, poor memory, shortness of breath, insomnia, poor vision, nocturia, frequency and generalized weakness. Four cases were without symptoms referable to elevation of blood pressure. It was observed that the fall in pressure was not always commensurate with the relief of symptoms obtained. In Case 2, Group I, the patient had no reduction in the blood pressure but did experience complete relief under treatment, although he had previously had a drop of 32 points in systolic pressure following cholecystectomy but without relief of symptoms. In Case 7, however, the patient experienced no relief from symptoms in spite of a drop of 62 points in systolic and 10 in diastolic pressure.

The incidence of females to males was very high, seven to one. In Janeway's series hypertension was 15.6 per cent and in Bell and Dawson's group 1.4 per cent more frequent in males, whereas in Boas and Fineberg's group females were two-thirds more frequently encountered and twice as often in Blackford, Bowers and Baker's series.

The blood pressure of those patients receiving liver extract was higher than in the other groups and it was in this group that most striking results were obtained. Otherwise the degree of hypertension did not afford any prognostic value insofar as the results obtained were concerned. Of the seventy cases, twenty-eight (40 per cent) had some cardiorenal involvement. Only 32 per cent of these cases obtained complete relief as compared with 83 per cent of the essential hypertension group that experienced relief. Only one case in the cardiorenal group was definitely made worse by a fall in blood pressure. One patient in the group had a brain tumor. One had lues. One patient has since died of cerebral hemorrhage, although systolic pressure was reduced 22 and diastolic 12 points. It has been generally considered unwise to administer nitrites over a long period of time. No permanent ill effects were noted from prolonged use of nitroglycerin although some patients re-

ceived this drug more or less continuously for a period of two or three years.

Only 11 per cent of the cases revealed a familial history of hypertension. This figure, however, is probably low because in many instances there was a lack of definite knowledge on the part of the patient of the family history. Eleven of the cases were associated with menopause. Twenty-eight per cent of the seventy cases had an associated obesity. The average weight of these patients was 175 and average ideal weight 150 pounds. Of the cases studied under forty years of age, only two were of the essential hypertension type. Forty-five per cent of the cases of diabetes studied in the clinic in the last two years had an associated hypertension. The average systolic pressure of these patients was 175, average diastolic 100, average age 54, and average fasting blood sugar 196.

CONCLUSIONS

1. The administration of liver extract with sedatives and nitroglycerin has proved the most effective treatment in essential hypertension.

2. Cases having cardiorenal complications reacted much less favorably to treatment than those of essential hypertension. Drug therapy was just as effectual in the former group.

3. Diathermy combined with drugs afforded less relief than when drugs were used alone.

4. Reduction in blood pressure caused practically no ill effects in all three groups.

5. The symptomatic relief obtained did not always parallel the drop in blood pressure.

6. Obesity was encountered in a little over one-fourth of the cases studied.

7. In the series of diabetic patients hy-

pertension was encountered in nearly half the cases.

8. Menopause was associated with hypertension in only 11 per cent of the cases, although females predominated seven to one in the series.

9. Essential hypertension was encountered in only two cases under forty years of age, representing an incidence of 2.8 per cent occurring under this age.

10. Prolonged administration of nitroglycerin caused no permanent ill effects.

BIBLIOGRAPHY

1. Alhausen, T. L., et al.: Liver extract in the treatment of hypertension. *Am. Jour. Med. Sc.*, 178:398, 1930.
2. Allison, W. L. T.: The use of sodium chloride, potassium chloride, sodium bromide, and potassium bromide in cases of arterial hypertension. *Canad. Med. Assn. Jour.*, 18:281, 1928.
3. Allison, W. L. T., and Clark, H. G.: Calcium and potassium chloride in the treatment of arterial hypertension. *Canad. Med. Assn. Jour.*, 15:913, 1925.
4. Ayman, D.: An evaluation of therapeutic results in essential hypertension. *Jour. A. M. A.*, 95:246, 1930.
5. Borg, J. F.: Experiences in the use of the sulphocyanates. *Minn. Med.*, 13:293, 1930.
6. Fineberg, M. H.: Potassium thiocyanate in the treatment of patients with hypertension. *Jour. A. M. A.*, 94:1822, 1930.
7. Granger, F. B.: Treatment of hypertension. Reprint from Victor X-ray Corporation. No. 520.
8. Heindenhein, R.: Versuche und Frazen Zur Lehre von der Lymphbildung. *Arch. f. Physiol.*, 38:112, 1891.
9. James, A. A., and Loughton, N. B.: The control of blood pressure with liver extracts. *Canad. Med. Assn. Jour.*, 15:701, 1925.
10. Lauger, O.: Subtonin. *Mediz. Klin.*, 23:1150, 1927.
11. MacDonald, W. J.: Extractives of liver possessing blood pressure reducing properties. *Canad. Med. Assn. Jour.*, 5:697, 1925.
12. MacDonald, W. J.: Liver extract and blood pressure. *Wis. Med. Jour.*, 15:26, 1927.
13. Macht, D. J.: Benzl benzoate. *New York State Jour. Med.*, 112:269, 1920.
14. Major, R. H.: The effect of hepatic extract on high blood pressure. *Jour. A. M. A.*, 85:251, 1925.
15. Maquire, L. M.: Potassium sulphocyanate in the treatment of hypertension. *U. S. Vet. Bur. M. Bull.*, 6:978, 1930.
16. Meakins, J., and Scriver, W. M.: The treatment of hypertension. *Canad. Med. Assn. Jour.*, 25:285, 1931.
17. O'Hare, J. P., and Hoyt, L. H.: Mistletoe in the treatment of hypertension. *New Eng. Jour. Med.*, 199:1207, 1928.
18. Priddle, W. W.: Sodium ion increase and potassium ion decrease blood pressure and symptomatic relief. *Canad. Med. Assn. Jour.*, 25:5, 1931.
19. Riesman, D.: Corpus luteum. *Jour. A. M. A.*, 73:330, 1919.
20. Smith, A. G., and Rudolf, R. D.: The use of sulphocyanate of soda in high pressure. *Canad. Med. Assn. Jour.*, 19:288, 1928.
21. Wallace, G. B., and Ringer, A. J.: Lowering of blood pressure by the nitrite group. *Jour. A. M. A.*, 53:1629, 1909.
22. Wilkinson, G. R.: Watermelon extract. *Jour. South Carolina Med. Assn.*, 23:366, 1927.
23. Zeias, F. R., and Brams, W. A.: Studies on the effect of nitroglycerin, amyl nitrate, and acetylcholine. *Am. Heart Jour.*, 5:300, 1930.

CALCINOSIS—EXTENSIVE DEPOSITS IN THE HAND AND ARM

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Calcium deposits, occurring in almost every part of the human body, have been described in medical literature. Extensive treatises have been written on the subject and various forms associated with other diseases, noted. Yet observation of the condition, particularly in the field of general practice, appears to be sufficiently rare to warrant the publication of the following case.

The etiology has not been definitely established although numerous theories have been advanced as to its origin. These include results of inflammatory reactions and disturbances of inorganic calcium metabolism similar in character to gout, except that calcium salts are deposited instead of urates. Skossogorenko⁵ states that the term "Calcinosis" is applied to a somewhat rare and peculiar disease involving calcium metabolism, the etiology of which is not clear and the treatment for which has not been determined. Clinically, the disease shows multiple deposits of calcium salts in the subcutaneous, peri-articular, peri-tendinous, perimascular, peri-nervous, peri-vascular, adipose or interstitial tissues. The deposits vary in size from a millet seed to a pigeon egg and usually have the appearance of platelets, clots or crumb-like masses with smooth but mostly uneven edges. Each case differs as to the distribution of the calcium deposits as well as to the tissue they select. In the Riese case, they appeared in the finger-tips after a needle-prick. However, such deposits are mostly grouped about the larger joints, around the attachments of tendons and aponeuroses, resulting in reduced motion or even immobility and producing malposition of the limbs. All ages are subject to the disease but most authors agree that in younger individuals it is more widely distributed and clinically more acute. In the areas of localization of the calcium, ganglionic abscesses may form which discharge a gruel-like mass. With adults, on the contrary, the location of the disease is more limited in its distribution and its clinical course more benign.

In a series of reported cases, the disease sometimes began without any definite cause and no pathological symptoms were evident.

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In other cases, there were noted adenomata of the epithelial structures (Selye); hypoplasia of the inner genitalia and, in connection with menstruation, marked variation in the calcium content of the blood (Shamoff); nephritis (Schintzer and Selye); Tuberculosis (Lowenbach); Scleroderma (Krause, Durham); rachitic affections of the whole skeleton and joint involvement.

Infectious diseases sometimes preceded the condition. In Parkes' case, the patient had had scarlet fever and diphtheria two years before. In Aesenberg's case, there had been malaria. Most authors note an atrophy of the skeleton with this disease and Schulze states that this must be considered not as the result, but as the beginning of the disorder in the calcium metabolism. Local accumulation is curtailed by liquefaction and expelling the contents of the lesions. Tashiro⁶ is of the opinion that calcification need not necessarily be preceded or accompanied by an abnormal amount of calcium in the blood, the essential feature for pathologic and normal processes of calcification being the local production of ammonia or any other base forming compound with the normal supply of calcium. This may follow infection, mechanical irritation or changes in physiologic protein metabolism at the same point.

Watt⁷ states that there is no evidence of any cellular activity concerned in the deposition of calcium salts but that there is evidence for their appearance here by precipitation. The precipitation may be originally in the form of carbonate and phosphate of calcium or may be as a calcium soap formed by reaction with a fatty acid and later gradually converted into the carbonate and phosphate.

Cases of calcinosis associated with other

pathologic processes such as scleroderma and Raynaud's disease have been reported by Durham,² Scholz⁴ and others. In the case here reported no evidence of other pathologic change was found.

Kennedy³ reported a case of calcinosis

about the middle joint of this finger. This was followed by a swelling in the palm of the hand which subsided some time after. About four years later he noticed other lumps on the hand. These appeared first as small raised nodules which were not painful or tender. For about a month they gradually increased in size but have not grown larger since that time. He next observed that the fingers

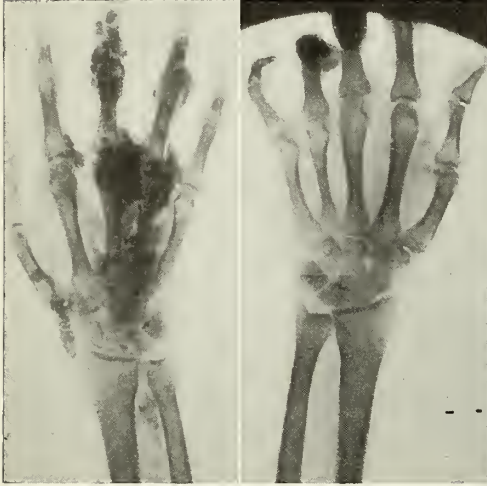


Fig. 1. Original plates taken in 1925 showing extensive deposits in the right hand and beginning deposits in the forearm. Left hand shown for comparison. Contractions of the terminal portions of the middle, ring and little fingers are due to an old injury.

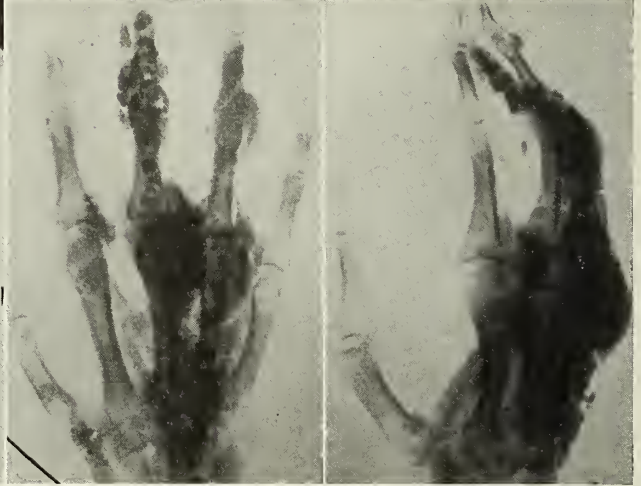


Fig. 2. Plates taken in 1925 showing marked deposits in the right hand.

with deposits occurring in the ante-cubital spaces, axillæ, and popliteal spaces, region of the hips and over the lower portion of the spine. X-rays revealed extensive calcium deposits in the skin and subcutaneous tissues and in the fascial sheaths and tendons. On a ketogenic diet the child, five years later, was well clinically and the calcium deposits had disappeared.

Craig and Lyall¹ reported "A Case of Calcinosis Universalis and a Suggested Method of Treatment." The patient, a girl of five years, was seen in March, 1927, and x-rays revealed many calcareous deposits in the soft tissues. Di-sodium phosphate drachms 1 was given orally four times a day. Within six weeks the calcareous masses were gone. Jeppson noted an increase in the excretion of calcium in feces in children after the administration of di-sodium phosphate.

REPORT OF CASE

Mr. A. L., aged twenty-three, a machine operator, reported for treatment of an infected finger in December, 1926. He stated that about six years previously he had had a sliver in the end of the middle finger of the right hand which a friend attempted to remove, unsuccessfully, with a jack-knife. Shortly after this he noticed a wart-like growth where the sliver had entered. Later he noticed a swelling

of the right hand began to swell and become stiff. About a week before he reported for medical attention, he received a scratch on the second finger just at the middle joint. Three days later, he felt pain and tenderness in this area.

Examination revealed an adult white male of twenty-three years somewhat underweight and undernourished. His family history was negative. He stated that he had attacks of nausea and vomiting some time previously, accompanied by pain in the region of the appendix. Several erythematous patches were present on the skin, over the elbows, legs and back of the neck. The skin was quite dry. The cervical, submaxillary, axillary and inguinal glands showed some enlargement. The thyroid gland was palpable but no definite evidence of hyperthyroidism was present. The heart sounds were normal and the lungs showed no evidence of pathologic change. Examination of the abdomen revealed a slight tenderness over McBurney's point. No enlargement of the spleen or liver was detected. Temperature was 98.2. Pulse was 92, regular and of good volume, respirations 16. Systolic blood pressure was 120, the diastolic 90.

Scattered over the dorsum of the right hand and particularly around the joint region were several raised hard lumps. These were not painful or tender. They varied in size from a small pea to a walnut. On the tops of several of the larger-sized swellings were small whitish areas resembling pustules. The skin over the remainder of these lumps was quite dusky in color. The fingers were swollen about the middle and distal joints and were held in a position of semi-flexion. Digital motion was somewhat limited. There was very little loss of power in the hand. The second finger showed a small sinus at the middle joint, exuding caseous material and some purulent serum.

X-rays of this hand showed a very interesting condition. Scattered throughout the soft tissues of the hand, particularly about the joints, were many opaque areas, so massed in certain places as to throw dense uniform shadows. This was especially noticeable about the middle, proximal and the carpometacarpal joints of the second and third fingers and in the interosseous spaces as well. Smaller

with iodoform gauze and allowed to heal by granulation. Healing was prompt and there was no recurrence. Following this the patient failed to report and he was not seen again until January, 1933. The patient is now twenty-nine years of age, weighs 126 pounds, and states that he feels quite well. (His previous weight at the time of his first examination was 103 pounds.) At this time, examination of the



Fig. 3. Plates taken in January, 1933, six years later, showing marked disappearance of calcium deposits from the hand and also the increased deposit in the arm.



Fig. 4. Photograph of hands taken in January, 1933, six years later, showing typical nodule on dorsum of right hand.

nodules appeared about the proximal joint of the index finger. The process extended also along the vessels in this area as well as about the proximal phalanx of the thumb. A deposit appeared also in the area between the radius and ulna reaching up into the arm for a distance of five or six inches. About the middle joint of the ring finger was a uniformly dense shadow with a well-rounded outline. Clinically this was a fluctuant swelling. X-rays of the remaining skeletal structures showed no abnormality except in the terminal digits of the middle, ring and little fingers of the left hand which were contracted from an old injury. No areas of bone absorption were observed.

The white cell count was 6,500. Blood smears showed a rather large percentage of lymphocytes. Blood Wassermann was negative. Smears from the sinus showed intracellular and extracellular diplococci. No acid-fast bacilli were found. The urine showed no sugar and no albumin. Blood was taken for calcium determination at this time but unfortunately the specimen was lost in transit.

The patient remained under treatment for a period of several weeks, during which time one or two of the fluctuant areas were incised and drained. From each of these areas about a teaspoonful of chalky-white material of the consistency of cream was evacuated. There were numerous firm caseous particles present. The wounds were curetted, packed

right hand showed one large nodule, on the dorsal surface, which was freely movable under the skin. Other small nodules appeared on the fingers and about the joints. These, however, were not as marked as when last seen. No recurrence was manifest in the areas which had been drained and curetted and they appeared quite normal. There is a firm ridge along the dorsum of the right arm which was not evident five years ago except as shown by the x-ray as a beginning process. X-rays of the hand are in marked contrast to those of 1925. The deposits in the fingers and also the hand have cleared up almost entirely with the exception of an area at the base of the third and fourth metacarpals. The deposit along the dorsum of the forearm, however, is more marked. With the disappearance of the calcium deposits throughout the hand, there has been a corresponding improvement in function. The patient is now able to flex and extend the fingers completely, his hand feels much stronger and for the last three years he has been able to operate his machine without trouble. His general physical condition has improved considerably.

During this six-year interval, no attempt at treatment other than the original drainage of the fluctuant areas has been made. A calcium determination at this time showed 14.7 mgms. calcium per 100 c.c. of blood.

SUMMARY

1. A case of extensive calcinosis of the right hand and arm, observed over a period of five years, showed remarkable improvement without treatment.

2. Appearance of the deposits following the removal of a sliver with subsequent infection, suggests this as a possible etiologic factor.

3. Improved function in the hand corresponded with the disappearance of the deposits.

BIBLIOGRAPHY

1. Craig and Lyall: Brit. Jour. Children's Dis. (January-March), 1931.
2. Durham: Arch. Int. Med., 42:467-490 (October), 1928.
3. Kennedy: Staff Meetings of Mayo Clinic (June), 1932.
4. Scholz: Am. Jour. Roentg. (July), 1932.
5. Skossogorenko: Jour. Bone and Joint Surg., 14:339-345 (April), 1932.
6. Tashiro: Am. Jour. Phys., 55:519, 1922.
7. Watt: Arch. Surg., 15:89-101 (July), 1927.

THE CONSERVATIVE TREATMENT OF GAS GANGRENE INFECTIONS

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Since 1853, when Maisonneuve¹ first described the condition which he named "Gangrene foudroyante," and which is now known to be the clinical entity of gas gangrene, great interest has been manifested in this condition. Of late years, especially during and following the Great War, the reports of many wounds infected with a gas-producing organism has led to considerable investigation as to the causes and treatment of this infection. If we read the history of cases infected with gas gangrene treated fifteen years ago, and compare with similar cases treated today, we will realize the change that has occurred leading to more conservative treatment. It is the purpose of this paper to give a brief outline of the pathology, diagnosis, and treatment of this condition, and report in particular two cases which were treated with gas gangrene antitoxin and conservative surgery.

While most cases of gas gangrene are found following wounds of one or more of the extremities, the condition may also occur subsequent to appendectomy, herniotomy, and other operations performed on organs in close proximity to the intestinal tract. In such instances the causative organism gains entrance to the wound from the alimentary canal. Another mode of infection which is often overlooked is through woolen clothing, as reported by Gage,² who has remarked on the seasonal incidence of the infection, most cases of this nature having occurred during the winter months when woolen clothing is worn. King,³ in his article, has given a comprehensive review of the various organs which may become involved and also modes of infection.

The commonest mode of infection, how-

ever, is that following wounds sustained out of doors. These include such wounds as compound fractures, crushing injuries, and puncture wounds. As occurs in all these forms of injuries, dirt and organisms are apt to be forced deeply into the involved tissue. As a result a favorable field for the growth of the causative organism is established. The most commonly found organism is that known as *B. Welchii* (*B. perfringens* and *B. aërogenes capsulatus*). This organism was first isolated by Welch and Nuttall⁴ in 1891 as a gas-producing organism in the blood stream, and since that time its definite relationship to gas infections has been established. The other most commonly found organism is that known as *Vibrio septique*, first isolated by Pasteur.

The infection is primarily one involving the muscle tissue. Where muscle tissue is abundant and subject to injury, an excellent field for the development of the gas-producing organism is supplied. The devitalized tissue allows growth of the anaërobes and the infection rapidly spreads from the crushed tissue to the adjacent healthy muscle. The rate of spread will depend to a great degree on the virulence of the organism, also on the general resistance of the patient.

Keeping in mind the type of wound in

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which the infection is prone to occur has led to much earlier diagnosis and better final results. With a history of this type of wound we should keep very careful watch of the patient for the first twenty-four to seventy-two hours. One of the earliest and most important symptoms is that of pain. As will be seen in one of the case reports, this was the first symptom to direct attention towards the possibility of gas infection. Other early signs are rapid pulse and elevation of the temperature. Early blood count will show a leukocytosis and increase in the polymorphonuclears. A few hours after the onset we will get the first evidence of gas formation in the tissues. This may be quite localized at the beginning, later spreading and giving rise to the typical crepitation so often found. Providing there is an open wound, the formation of gas with the attending muscle destruction will give rise to the peculiar odor which has often been described as "mousy." On examination of the affected area we will find a peculiar brown pigmentation of the skin.

In addition to the above local manifestations, the patient will probably be markedly toxic, but still, as is peculiar in this type of infection, quite bright mentally. If the condition continues without adequate treatment, it is striking the extreme degree of toxicity which may develop in a few hours.

If we suspect and are reasonably sure of the diagnosis, we should not wait for the positive identification by culture of the causative organism. It has been reported that at times the culture will be negative (due, some believe, to the early administrative of antitoxin) but in most cases the causative organism will be found. Culture is made on a dextrose-containing medium and in about ninety per cent of the cases will show the presence of *B. Welchii*. However, our aim should be to diagnose the condition very early in its course, and it is only by so doing that the more conservative treatment will improve the final results.

As in any other condition, the first form of treatment we should consider is that of prophylaxis. This will be made possible if we bear in mind the type of wound in which gas-producing anaërobic organisms may flourish. When such a wound presents itself, it should be our duty, besides doing a thorough debridement and giving a prophylactic dose of tetanus antitoxin, to also give a prophylactic dose of gas gangrene anti-

toxin. This is now facilitated by pharmaceutical houses putting on the market a combined package, containing in one vial tetanus antitoxin and gas gangrene antitoxin (*Perfringens* antitoxin and *Vibrio* septicæ antitoxin).

The next step in the treatment should be the careful watching of wounds that may be infected, and interference at the earliest sign of gas gangrene involvement.

The definite diagnosis having been made, immediate surgical drainage should be established by multiple long incisions over the limb and the separation of the muscle bellies by blunt dissection. At the time of operation, Dakin tubes should be inserted to allow for later irrigation with potassium permanganate solution, Dakin's solution, or other solutions according to the individual preference of the attending surgeon.

Immediately following the operation gas gangrene antitoxin (combined) should be given. The usual first dose is 10,000 units, and for the best results this should be given intravenously in saline. A rather severe reaction may occur but as a rule this lasts for only a short time. Following the intravenous dose, the antitoxin should be repeated at intervals of eight to twenty-four hours, depending on the individual case. These subsequent doses are usually given intramuscularly.

In addition to the above specific treatment, general care consists of supportive measures, the attention to elimination, and the forcing of fluids. If there has been extensive destruction of soft tissue, it may be necessary at a later date to resort to skin grafting to close over the defects.

The following two case reports are given to illustrate a method of handling such an infection.

Case 1.—H. C., a teamster, aged forty-two, was admitted to Harper Hospital at 8:30 p. m., April 25, 1931, with the following history.

At 4:15 p. m., on that day, the patient's team ran away and he was thrown to the ground, striking against a lamp post. He was taken immediately to Receiving Hospital, where first aid was rendered for a compound fracture of the right forearm and abrasions of the face. Following debridement of the wound of the forearm, the lacerations were closed with silkworm gut sutures. He was given 10,000 units gas gangrene antitoxin and 1,500 units tetanus antitoxin intramuscularly.

On transfer to Harper Hospital general condition of the patient was fair and he was quite comfortable, having a supportive plaster mold on the right arm. Temperature on admission was 98.8 and pulse was 90.

On April 26, x-ray examination of the skull re-

vealed a linear fracture in the right temporoparietal region, and multiple comminuted fracture of the right ulna. At 12 noon temperature was 100, pulse 96, and patient comfortable. Moderate pain developed in the right forearm during the evening and when seen at 11:30 p. m. of the same day, thirty-one hours after the accident, the pain was severe. Temperature was 101.5, pulse 112, and patient was beginning to show signs of toxicity. On examination, it was found that the fingers of the hand were somewhat swollen and cyanotic. The splint was immediately removed and we could make out a small area of subcutaneous emphysema. In addition to the presence of gas the typical "mousy" odor was noticed. There was no evidence of involvement of the upper arm.

The patient was taken immediately to the operating room, and operation was performed under nitrous oxide anesthesia. All sutures in the forearm were removed. Multiple longitudinal incisions were made in the forearm and also in the upper arm. The muscle bellies in the forearm were separated by blunt dissection and several Dakin tubes were inserted. At time of operation a culture was taken, and report from the laboratory at a later date showed the presence of *Clostridium novyi*.

On the patient's return to the ward, at 1 a. m., April 27, 10,000 units gas gangrene antitoxin (combined) were given intravenously in saline. Several hours later, irrigation with potassium permanganate solution (1:5000) was begun through the Dakin tubes. At 8 p. m. of the same day temperature was 101.0, pulse 102, and general appearance of the patient was improved.

On April 28, antitoxin was repeated in the same dosage but was given intramuscularly. This was the last dose of antitoxin deemed necessary, and from this time on patient made gradual improvement.

His stay in the hospital was uneventful up to May 6, when excision of the necrotic muscle of the forearm was performed and a small loose fragment of the ulna removed. The patient was discharged from the hospital June 3, 1931, wearing a posterior plaster mold. Treatment from this time on consisted of dressings, and later the application of a splint to secure better extension of the fingers. When last seen, patient was able to do light work, although due to the extensive muscle destruction he had lost the power of abduction of the thumb, and also the power to fully flex the fingers.

An interesting point to be noted in the above case is that, in spite of the patient's having received gas gangrene antitoxin soon after the accident (within four hours), gas gangrene infection became established. However, it is important to note that this was given intramuscularly, and the effect was not sufficient to prevent the development of the infection. This patient received altogether 30,000 units of the antitoxin; 10,000 units by the intravenous route, and 20,000 units intramuscularly.

Case 2.—W. K., male, aged thirty-two, was admitted to Evangelical Deaconess Hospital December 25, 1930, with a history of having been run over by a car and sustaining injuries to both legs. Examination on admission revealed a fracture of the left femur at the junction of the middle and lower thirds, with considerable displacement of the fragments. There was also a transverse fracture of

the left fibula. In addition, there was extensive soft tissue injury to the muscles of the posterior aspect of the right lower leg.

On admission temperature was 99.0, pulse was 100. Under ether anesthesia, skeletal traction with calipers was applied to the left femur and a thorough debridement and closure of the wound of the right leg was done. One thousand and five hundred units tetanus antitoxin were given.

On December 26, temperature was 102.2, pulse was 130. The patient was markedly toxic. Examination of the left leg disclosed a moderate amount of swelling. Patient complained of severe pain in the whole right lower extremity. On removal of some of the sutures there was found to be a small amount of gas present and the odor from the wound was suggestive of that found in gas gangrene infections. A diagnosis of gas gangrene was made, and immediately, under nitrous oxide anesthesia, multiple longitudinal incisions were made over the leg and also over the lower part of the thigh. The muscles of the calf were separated by blunt dissection and Dakin tubes inserted for later irrigation. Following the operation 10,000 units gas gangrene antitoxin (combined) were given intramuscularly. The same dose was repeated in eight hours, but this time the antitoxin was given intravenously in saline.

No further antitoxin was given and course was uneventful, the patient making a gradual recovery with, however, considerable loss of soft tissue of the calf of the right leg. On February 20, 1931, the calipers were removed from the left leg and a plaster cast was applied. On February 21, under local novocaine anesthesia, multiple Reverdin skin grafts were applied to the denuded area on the right leg.

Culture of the wound taken at time of operation showed the presence of *Clostridium Welchii*.

The patient was discharged from the hospital March 14, 1931. Subsequent treatment consisted of dressings and attention to the fractured left leg. When the patient was last seen, in November, 1933, he was walking without a limp and had recovered full function of both lower extremities.

This patient received 20,000 units of the antitoxin, 10,000 of which were given intravenously, and the remainder given intramuscularly.

SUMMARY

1. It would seem advisable, in all wounds where there is a probability of infection with gas-producing organisms, that a prophylactic dose of gas gangrene antitoxin should be given in addition to the usually administered dose of tetanus antitoxin.

2. The early diagnosis and early treatment of these infections will result in the saving of many limbs which might otherwise require amputation.

3. It would seem that, for the quickest and most satisfactory results, the initial dose of gas gangrene antitoxin should be given intravenously.

4. While the use of antitoxin has a very definite place in the therapy, its use must be combined with early and thorough surgical measures.

5. Two cases of gas gangrene are re-

ported, who through the means of conservative treatment now have useful extremities.

I wish to take this opportunity of thanking Dr. A. H. Whittaker for the use of the above case reports.

BIBLIOGRAPHY

1. Frazier: *Keen's Surgery*. 1:526-9, W. B. Saunders Co., 1910.
2. Gage, I. M.: *Amer. Jour. of Surg.* New Series. 1: No. 4, 177-184 (Oct.), 1926.
3. King, Walter E.: *Amer. Jour. of Surg.*, New Series. 14: No. 2, 460-471 (Nov.), 1931.
4. Welch and Nuttall: *Bull. Johns Hopkins Hosp.*, 3: No. 24, 81-91 (July-Aug.), 1892.

THE RELATION OF SYPHILIS TO SURGERY A DIAGNOSTIC AND PROGNOSTIC PROBLEM*

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The manifestations of syphilis in the skin, the mucous membranes, the nervous system, the viscera, and the skeleton system, all are characterized by an extraordinary mimicry which makes not only for clinical interest, but frequently establishes fascinating problems in differential diagnosis.

For the most part, clinicians have concerned themselves with the examples of syphilitic mimicry as these apply to general systemic disease, neurological conditions, cutaneous manifestations and diseases of the eye. Relatively little has been written of the surgical aspects of syphilis and more particularly of the syphilitic as a surgical problem.

Broadly speaking, this subject may be discussed under three general headings or from three standpoints. First, the syphilitic active or latent with regard to his infection, and presenting acute or chronic surgical conditions. Second, the syphilitic with a surgical condition caused directly by his specific infection. And third, the syphilitic presenting conditions definitely due to his infection but which exemplify surgical mimicry.

Under the first heading, the syphilitic who presents acute or chronic surgical conditions, or, as it might be expressed otherwise, the surgical patient who, at the same time, has syphilis, we are confronted with the problem of the evaluation of a serious systemic disease which, under certain conditions, presents a definite contraindication to operative interference on the one hand; on the other, in the light of a great emergency, such contraindication may have to be disregarded for the time being. In either case, and irrespective of the duration and type of the syphilis which is present, the surgical prognosis and risk are definite factors to be carefully considered. It may, perhaps, be

pertinent to discuss briefly the most frequent conditions which are occasionally met and in which the evaluation of a concurrent infection complicates an otherwise clear picture. Obviously, any surgical condition can occur and is occasionally met with in association with either acute or chronic syphilitic disease. Looking back over my own experience, the following have occurred most frequently: acute appendicitis; fracture and dislocation; otitis media and mastoid disease; trauma and wounds; acute gall-bladder disease; and acute hyperthyroidism. Any one of these might be taken for a text as to the indications or contraindications in a particular case.

Let us consider, first, such conditions as above mentioned in the presence of an acute or relatively fresh syphilis. First, and of major importance, is the danger of such a case to the operator himself. Practically all of the accidental cases of syphilis which have occurred in surgeons and obstetricians have occurred from trivial injuries sustained during the operation on a patient who is in what might be termed the septic stage of his syphilitic infection. I can recall numerous instances of dentists, physicians and surgeons who have been infected in this way. Such contamination was certainly more common before the general use of rubber gloves, but it still occurs occasionally when the operator is injured by a tear or rip

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in the glove caused either by a needle or other sharp instrument. Such accidents are absolutely preventable in all but cases of extreme surgical emergency. The routine, careful physical examination of the surgical patient, and the preliminary biologic test of his blood would indicate, obviously, the presence of syphilis in the patient, and where an active infection is present, unless a great emergency exists, the patient can, in a short time, be properly fortified by treatment so that the risk to the operator is a negligible one. When the surgical indication is so acute that no delay is possible, the presence of an acute syphilitic infection calls for extreme care on the part of the surgeon lest he injure himself and subject himself to the danger of accidental infection. Where such injury occurs and the knowledge of the infection exists, it has been shown that the immediate application of a 30 to 40 per cent calomel ointment to the puncture wound is a reasonably safe preventive of infection.

Turning now to the patient, the existence of an active syphilis has a very definite bearing on his surgical prognosis; however, not so great a bearing as occurs in older latent or occult infection. However, in the septic period of the disease the surgical wound establishes a *locus minoris resistentia*, and in such an area, occasionally, sloughing or failure to heal can occur and from such an area a greater and wider dissemination and a greater virulence in the general infection occasionally takes place. Patients with active syphilitic infection, therefore, are urgently in need of specific treatment during convalescence, not only to insure a good surgical result but to avoid wider dissemination and more active manifestations of their syphilitic infection which occurs as a result of the surgical trauma. To sum up, therefore, active syphilis constitutes a temporary contraindication to surgical intervention. Where the latter is imperative through great emergency, vigorous treatment should be instituted immediately following operation and during convalescence, and especial care should be taken by the operator to avoid injury to himself, particularly such as occurs through a needle prick.

The patient whose syphilis is old, latent, or occult, presents a somewhat different surgical risk. Under these conditions there is very much less risk to the operator, although occasionally, accidental infection can occur under these conditions. A greater risk,

however, obtains for the patient. There are many cases in which perfectly clean operative results could be anticipated in which the presence of latent and particularly untreated syphilis brings about embarrassing results through sloughing, non-healing, and the actual development of gummous syphilides in the operative field. These are occasionally extremely difficult to recognize by reason of the presence of secondary infection, and because their syphilitic morphology has been altered by the operative procedure. I have, many times, seen such conditions complicating abdominal operations of many types, operations on the long bone, on the bones of the jaw, particularly after extractions or following fracture. When recognized and properly evaluated, judicious treatment leads almost immediately to prompt healing, but frequently with cicatricial complications or residua which could have been avoided had the existence of the syphilis been suspected.

Cases of this kind are readily detected by the routine serologic examination of all patients prior to operation. This precaution is taken in many hospitals and should be universally insisted upon by the surgeon. It is, however, particularly in private practice that failure to employ the serologic test leads to later embarrassment. The finding of a positive test does not of necessity mean a contraindication to immediate surgical operation. The all-important question where such a finding occurs is a proper evaluation of the syphilitic infection which the positive test indicates. The first question to be ascertained is the duration of the infection, since, generally speaking, the older the infection the less important is it from the standpoint of the patient's surgical risk. The second question and of greater importance is whether the infection has previously been recognized and what the patient's background of treatment has been. If the infection has been present for many years, and the infection had been treated, particularly during the early years, in other words, if there has been even a fair background of anti-syphilitic treatment, the risk of untoward surgical result is very slight and, generally speaking, the operative procedure need not be delayed. If, however, there has been little or no background of treatment, and I may say that this is the most frequent occurrence, then unless the emergency is great, operative procedure should be post-

poned until the patient has been properly fortified so that together with a continuance of the treatment during convalescence, a happy surgical outcome can be anticipated. Our experience is that under these conditions two or three injections of arsphenamine and the simultaneous administration of either bismuth or mercury over a period of two or three weeks, suffices adequately to protect the patient against unhappy surgical result if the treatment is continued during the period of surgical convalescence. Under this régime I have never seen an old syphilis lighted up through surgical trauma, or a surgical wound complicated by a syphiloma. To sum up, complete success of operative procedures in cases in which syphilis exists without adequate treatment should have the operation deferred until a proper background of treatment has been established. Sero-positive cases in which a background of treatment exists may safely be operated upon, but they also should receive additional treatment during their surgical convalescence. The continuance of treatment supplementing the preliminary background will definitely prevent cicatricial and adhesive changes which frequently are caused by the residua of reestablished syphilitic foci.

There is very little in surgical texts concerning surgical conditions caused directly by syphilitic disease. Generally speaking, these are usually late manifestations of syphilitic infection. Most common of all are those occurring in bones, in the form of syphilitic osteomyelitis and osteitis leading to very definite sequestration, and constituting surgical conditions which must be adequately met by the surgeon before anti-syphilitic treatment can be at all effective. Next to osteomyelitis are the not infrequent mechanical obstructive changes which are the result of old syphilitic disease, and which by reason of their position occasionally lead to serious dysfunction or obstruction which must be surgically relieved. Such are the occasional strictures of the esophagus, syphilitic strictures of the rectum, and adhesive peritonitis particularly affecting the large bowel. A third condition somewhat more rarely met with is gummous arthritis or osteoarthritis occasionally uncomplicated, but at times associated with infection of the joint. And lastly, cases of acute hyperthyroidism which appear definitely to be due to syphilitic disease.

The last named constitute the exception to

the rule that the syphilitic surgical conditions are usually late syphilitic sequelæ. The occurrence of syphilis and hyperthyroidism is usually the casual coincidence of two common diseases. There are, however, a few cases in which coincident with the septic period of syphilitic diseases there occurs the acute onset of symptoms of hyperthyroidism indistinguishable from those of the ordinary type of case. There are two possible interpretations of such cases. First and probably more frequent, that the syphilitic infection has been the insult which in a potential hyperthyroid case activates the onset of symptoms. Under these conditions the syphilis would differ in no way from ordinary acute infections or from emotional or psychic traumata as etiological factors.

There are, however, a few cases which I have seen in which the institution of anti-syphilitic treatment has brought about so prompt a disappearance of all the symptoms that one can only ascribe the hyperthyroidism in these cases to an early syphilitic thyroiditis. In a few of these cases the emergency was so great that operative interference was contemplated. The happy results achieved by constitutional treatment directed to the syphilis in this group lead to the suggestion that where acute syphilis and acute hyperthyroidism coexist, the possibility of a syphilitic thyroiditis must be kept in mind and operative interference can at least be delayed in such cases until the few days necessary can determine whether the syphilis is a casual or a causal factor in the hyperthyroid state.

With regard to osteomyelitis, while this occasionally occurs in the long bones, it is preëminently a morbid picture seen in the bones of the skull and particularly in those of the nasal cavity and the floor of the mouth. For some reason, syphilitic osteomyelitis of the bones of the skull involving the parietes and frontal bones was far more common years ago than it is today. However, one still sees not infrequently definite sequestra in these locations with extensive bony destruction which, if treated surgically alone, are constantly progressive. On the other hand, if treated merely as syphilitic manifestations they also defeat the most energetic therapeutic efforts because of the need of simultaneous surgical intervention. Such cases as these require the concerted and intelligent efforts of both the syphilologist and the surgeon and under these con-

ditions they invariably lead to a happy result. In more remote instances the condition also exists in the bone of the jaw or ribs, the clavicle and sternum and, more rarely, in the vertebral column. Under the latter condition the gummous spondylitis closely resembles the picture of tuberculosis and constitutes an occasional difficult differential diagnosis.

The mechanical obstructive changes such as strictures are seen most commonly in the large bowel and more rarely in the esophagus. The hour-glass stomach is also an example of such mechanical change due to gastric syphilis. Such lesions are the end effects of syphilitic disease which are in no way influenced by anti-syphilitic treatment but which require surgical intervention when they produce obstructive symptoms. While they, themselves, are unaffected by anti-syphilitic treatment, such should be given when surgical intervention is done to prevent the appearance of new lesions or surgically induced syphilomata which could occur as a result of surgical trauma in untreated individuals.

It was formerly believed that most strictures of the rectum could be ascribed to syphilitic disease. Late investigations have shown, however, that many such previously regarded syphilitic strictures are due to tropical lympho-granulomatosis, a venereal disease of non-syphilitic nature. There are, however, still remaining a number of rectal strictures which are the sequelæ of slow-healing ulcerative gummous proctitis.

Very little recognized is the association of plastic peritonitis in latent syphilitic individuals following abdominal operations. I have not seen this reported elsewhere, but I am quite certain, from my own observations, that the occasional occurrence of peritoneal adhesions, which later give rise to pain, occasionally to definite intestinal obstruction, can be ascribed to the presence of unsuspected latent syphilitic disease.

I have particularly seen this occur in cases of cirrhosis, and following operation for gastric disease, either ulcer or cancer, where the condition was later determined to be either gastric or perigastric syphilis.

Such forms, however, of plastic peritonitis due to visceral syphilis need not follow operation, but frequently occur during the course of chronic syphilitic disease, particularly of the liver, stomach and spleen, and are not infrequently found when the pa-

tients are operated upon for one cause or another.

I should like to turn now to the syphilitic conditions with surgical mimicry. These perhaps constitute the most important phases of the surgical aspects of syphilis, inasmuch as they are frequently the source of error in diagnosis and lead to surgical attack where this is entirely unnecessary. First and foremost is the mimicry which exists between the chancre and the cancer. How many surgeons of long experience can say that they have not fallen into error in mistaking the primary lesion of syphilis for a cancer when this occurs on the lip or tongue or the breast?

In the days before the discovery of the spirochete and before the introduction of the diagnostic blood test, there was perhaps some excuse for an occasional error of this nature. In these days where the clinical diagnosis can be substantiated by such accurate methods of determination, the removal of a breast, of the tongue, of the lip, or the penis when syphilis is mistaken for cancer constitutes an inexcusable error. The time is too short to enable me to elaborate upon the clinical differential diagnosis between the genital and extragenital sore, and the cancer in the corresponding area. In the main, there are sufficient clinical criteria to enable the careful diagnostician to make a diagnosis without laboratory aid. There are, however, occasional cases in which the traumatized chancre can so closely simulate the cancer, that the most careful clinical analysis fails to establish clear differential diagnostic criteria. Under these conditions the laboratory aid, with the demonstration of the infecting organisms or the biologic test, or both, as well as the biopsy, will serve to prevent a serious error in diagnosis. In the case of the finger chancre, the majority of cases which I have seen have all been mistaken for some form of paronychia and have been incised or otherwise surgically treated. In this connection it may be recalled that a surgeon of national repute lost his life from the failure of his colleagues to recognize an insignificant chancre of the finger. He was operated on for suspected breast cancer with axillary adenitis, which of course later was determined to be a syphilitic satellite bubo.

Of great interest are the occasional cases of gummous lymphadenitis affecting particularly the glands of the neck and simulating

closely tuberculous disease. The points of differentiation clinically are not very clear cut. Nevertheless, they are sufficiently definite, together with the laboratory diagnostic criteria, to enable one to establish a diagnosis if sufficient time and thought be given to it. I have seen gummosis lymphadenitis also confused with Hodgkin's disease and lymphosarcoma.

Syphilis of the long bones simulating either tuberculosis or sarcoma are also excellent examples of syphilitic mimicry in a definite surgical field. Together with these are those cases of syphilitic periostitis, particularly those on the tibia, on the radius and ulna, clavicle, ribs and sternum, which frequently are incised in the belief that they are some form of septic or pyogenic disease. In connection with the bursæ, it should be remembered that the prepatellar bursa and that over the olecranon are peculiarly disposed to gummosis involvement, and as they are also frequently the site of traumatic bursitis an obvious confusion as to their nature can exist.

Of paramount importance are the various forms of gastric syphilis. These occur in the form of round and serpiginous ulcer and of gummosis tumor simulating cancer.

Clinically and even from the standpoint of the x-ray, there are no adequate criteria to establish the differential diagnosis between the various forms of gastric syphilis and other forms of gastric pathology which they so closely simulate.

Syphilis may produce a round ulcer either by thrombosis and infarction, or by gummosis ulceration which is indistinguishable from peptic ulcer. The more diffuse form of ulcerative gastritis due to syphilis is clinically indistinguishable from other forms of ulcerative gastritis. Solitary massive gummas of the gastric wall present the typical picture of gastric neoplasm.

For the most part, the diagnosis of these forms of syphilitic disease is an operative, pathological or postmortem finding. They constitute the most striking examples of syphilitic mimicry.

In a syphilitic individual, the occurrence of gastric disease which proves unamenable to the accepted forms of treatment should always be investigated with the possibility that one may be dealing with one of the many forms of gastric syphilis.

Lastly, reference might very profitably be made to the various manifestations of neu-

rologic syphilitic disease which present conditions not infrequently mistaken for surgical indications. Of greatest frequency are the gastric crises, the abdominal crises, hepatic and gall-bladder pain, crises involving the uterus and bladder, all due to *tabes dorsalis* and all of them occasionally surgically treated by reason of their simulating various forms of the acute abdomen.

What surgeon of long experience has not at some time operated for what he believed to be gall-bladder disease or gastric disease to find a completely negative abdomen and no findings to substantiate a sharply localized pain and abdominal distention which so eloquently bespeak the acute abdomen? It is no uncommon finding in old tabetics to ascertain the history of surgical intervention and to find the telltale scars indicating operative interference. I have many times seen tabetics who have had not only such exploratory operations, but who have had gall-bladders removed or drained, or who have had gastro-enterostomies performed, needless to say with no relief of the symptoms for which they were operated upon. Cases of this kind are frequently more or less obscure cases of *tabes*, in that they are not ataxic individuals. The finding of greatest importance in establishing the true nature of such conditions of surgical mimicry are the eye findings. I think it is a safe statement that no case of gastric, abdominal or other form of tabetic crisis occurs without pupillary disturbance which would enable a diagnosis of cerebrospinal disease to be established. Of secondary importance, but also frequently present, are the condition of the tendon reflexes and other neurological findings of the motor and sensory systems which for the most part can be determined, together with the blood and lumbar puncture findings which substantiate, from the laboratory, the clinical picture of *tabes*.

In conclusion, a word might be said on the other side of the picture. Too much importance need not be placed upon a positive blood finding as necessarily indicating the syphilitic nature of an apparent surgical condition. In the main the association of such a finding with a surgical condition is a casual rather than a causal one. However, a proper evaluation of the patient's existing syphilis as affecting not only the diagnosis but the patient's prognosis from the standpoint of his surgical condition, syphilitic or

otherwise, is well worth careful study. A proper appreciation of the rôle of syphilis as both a causal and casual factor would lead to happier end-results, less accidental

infection, less unnecessary intervention, and a clearer concept of the devastating effect which, through its ubiquity, syphilis may have on other morbid processes.

CORONARY THROMBOSIS (THE ACUTE INDIGESTION OF YESTERDAY)

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Every year much has been written about acute obstruction of the coronary arteries since the first important and satisfactory account of its clinical features was published by the Russian authors, Obratzow and Straschesko,¹⁴ in 1910. Herrick² of Chicago, in 1912, first focused the attention of the American medical profession on this condition by emphasizing the fact that coronary thrombosis is a disease entity and as such can be recognized during life and need not necessarily prove to be fatal. Libman^{12, 13} in his writings appears to have been familiar with this symptom-complex at about the same time and Levine¹¹ diagnosed a case ante-mortem in 1918. The clinical and pathological findings¹⁸ have been well described by White, Levine, Christian, Wearn, Krumbhaar and Crowell, Benson and Hunter, Willius, Gordinier, Parkinson and Bedford and others. Since the war, the literature on coronary disease has been very extensive and gradually, from this mass of observation, experimentations, and post-mortem examinations, much knowledge has been derived by which the disease can and should be recognized in the majority of instances.

In the infancy of our knowledge of the disease, the condition was of more interest to the pathologist than to the clinician. At the present time, although the clinician very often overlooks the condition, there is a tendency on his part to consider this too frequently, losing sight of the fact that there are many differential diagnoses, such as: gall stone pain, perforating peptic ulcer, acute pancreatitis, angina pectoris, pneumonia, pericarditis, pleurisy, tabetic crises, etc. All these may have common findings but usually each symptom-complex presents distinctive features. A careful history is essential and often some symptom referable to the heart may be elicited. It is important to remember that not infrequently no previous symptoms have ever been noted by the patient. Again, it is necessary to be ever

watchful of cases where the pain has not been very severe as in hypo-sensitive people or in people with congestive failure with arrhythmia.

A discussion of the etiology and pathology, sex and age incidence will not be attempted here. Suffice it to say that the most common site for thrombosis is about one centimeter below the mouth of the descending branch of the left coronary artery, "the artery of death," producing an infarction in the left ventricular wall near the apex. Cardiac infarction has been reported in infancy¹⁷ because of an infectious embolism and has been found in a youth⁶ under twenty years of age, so that substernal pain at any age should make one think of coronary disease.

There is no fixed clinical picture of sudden obstruction of a coronary artery any more than there is of an obstruction of a cerebral artery. The triad of symptoms:⁷ severe lasting retro-sternal pain, dyspnea and orthopnea, and gastralgia—have been added to from time to time until now we have a greater knowledge with which to approach and aid the present day patient.

We are called to see a patient (much more frequently a man and, by statistics,^{1, 7, 22} usually after mid-life) who upon questioning is found to be suffering with extreme substernal and epigastric oppression, the typical "acute indigestion" or "ptomaine poisoning." The call is usually at night because coronary accidents occur fre-

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quently when people are at rest, in contradistinction to angina pectoris, which is generally brought on by effort.

The patient has dyspnea which may vary from slight breathlessness to cardiac asthma. Cheyne-Stokes respiration may also occur. Frequently at first glance he looks very sick; has an ashen color or a rather characteristic sallow unhealthy tint of the skin suggesting sometimes slight jaundice or anemia; his face and hands are clammy; often he is covered with perspiration; he may be vomiting. He is moving about trying to find a restful position, which is quite different from the individual suffering with an attack of angina pectoris, who sits or stands motionless, an agonizing look on his face, waiting for the paroxysm to pass. It is best to leave the patient where found until carefully examined, and then, if the diagnosis of coronary thrombosis is made or there is a question of it, make him as comfortable as possible without moving him more than is necessary. If on the first floor in a house, the patient should not be moved up another flight to his bedroom until the shock from the attack has passed.

Examination.—On listening to the heart, it is noticed that the sounds are usually weakened, especially the first sound at the apex. Sometimes there is a tic-tac rhythm due to weakened first sound; re-duplication and gallop rhythm are not uncommon. Protodiastolic gallop rhythm is caused by an increased third sound which follows shortly after the normal second sound and is best heard at the apex or between the apex and the sternum; never at the base. This third sound is a very important sign²² of weakness of the left ventricle and one that is often overlooked. The pulmonic second sound is accentuated and the aortic second sound is very weak or entirely lacking—a sign of a failing left ventricle and increased pulmonary tension. The heart often rapidly dilates, especially the left ventricle. This may be demonstrated by percussion or by roentgen ray. A functional systolic murmur due to the dilatation may be heard in the mitral area. A *pericardial friction rub* should be listened for carefully because it is often transient and may disappear after a day or two. The most common site to hear this rub is near the sternum, especially along the left border, but it may be found anywhere or everywhere over the precordium, and, if the rub is loud enough, may be widely

transmitted to the back and elsewhere. There may be premature beats, partial or complete auriculoventricular block, paroxysmal or permanent auricular fibrillation, or paroxysmal ventricular tachycardia. The latter is of particularly ill omen, but, fortunately, quite rare. The *pulse* may vary from a marked tachycardia to a bradycardia, due to heart block, which is very rare as the infarct does not usually involve the region of the Bundle of His.

The *blood pressure* in coronary thrombosis, followed by cardiac infarction, usually falls. Afterwards, there is generally weakness, mental disturbance, faintness, dizziness and even syncope, coma, and convulsions. Congestive failure may ensue which produces râles, cough, hemoptysis, gastro-intestinal symptoms, ascites and edema. A fever of 100-101 degrees Fahrenheit is usually noted for a few days. Temperatures of 103-104 degrees Fahrenheit make for poorer prognoses.

It is well to remember that there is no antecedent history of disease of the circulation in 62 per cent³ of the cases and that the immediate mortality is less than 20 per cent.¹ If the patient does not suddenly die because of a ventricular fibrillation, or because the area of infarction is not too large, or, if, in a few days, because of a rupture of the ventricular muscle through the infarcted area, or because of an embolus from a mural thrombus, the chances of recovery are probable if good care and common sense are employed. Morphine, and plenty of it, is the immediate treatment. Sometimes it may take a grain or more, in divided doses, before the patient is relieved; occasionally he is put to sleep by the drug before the pain ceases. One of the theophylline-ethylamine preparations (aminophylline, metaphyllin, euphyllin, etc.) may be given intravenously for its probable dilating effect on the coronary arteries, thus relieving some of the local anoxemia. Again, let it be emphasized; disturb the patient very little at this stage of the illness, relieve his pain and make him as comfortable as possible. The head may be very slightly raised and often a pillow under the knees is enjoyed by the patient. It is not necessary to give digitalis at once unless there is congestive failure, auricular fibrillation, or cardiac asthma, which is a sign of failure of the left ventricle. A fluid diet in small amounts is to be recommended for the first few days. Intra-

venous injections¹⁸ of 50 per cent buffered glucose solution (50-100 c.c. daily for several days) is nourishing to the injured heart muscle and may be helpful. Let the bowels go for a few days; don't give enemas until the shock has passed. Too much bathing is often very tiring. "Masterful inactivity" is the watchword. If dyspnea or cyanosis be present, an oxygen tent may aid in making the patient more comfortable, if it causes no unfavorable mental reaction.

Electrocardiographic study generally helps to diagnose, localize, and indicate duration of myocardial infarct. Its use in middle aged patients with mild substernal symptoms, difficult to evaluate, is often diagnostic. Usually it shows some abnormality of the T-waves, but the actual picture of a coronary occlusion often does not appear for several days.⁴ The electrocardiogram may show within twenty-four hours a low or flattened T-wave, or again a high take-off and a peculiar rounding of the T-wave¹⁵ (described by Pardee); later, a peculiar V or cone-shaped inversion; intraventricular block (the commonest cause²² of which is coronary disease) which is noted by a spreading of the QRS complex with, or without, notching; low amplitude of ventricular complexes; alternation in auriculo-ventricular conduction; and left axis deviation. The prominent Q3-wave,⁵ which formerly has been interpreted as helpful in the diagnosis of coronary occlusion, is now stated by Hurxthal generally to be an inverted R phase of the QRS complex. Any of these points, singly or collectively, may arouse one's suspicions and aid in the diagnosis of coronary thrombosis. It is often of interest, and frequently of distinct value in diagnosis, to note the changes in the complexes in a series of electrocardiograms made daily or every second day.

While *roentgenological* study may show no abnormality, it generally presents cardiac enlargement and often a tortuous aorta. It is said by some authorities that the heart action may be weak if the patient is examined fluoroscopically, but it is very difficult to see any variation.

Usually a *polymorphonuclear* leukocytosis in a mild degree is found for two or three days and the grade and duration of leukocytosis on account of sudden cardiac infarction is a useful clew to the size of the infarct and, hence, to prognosis.

The *sedimentation rate*¹⁶ is a good indica-

tion of the progress of the healing of a myocardial infarct for it remains rapid even after the white blood count and the temperature have become normal.

A rising *non-protein nitrogen*,¹⁹ or a non-protein nitrogen that remains elevated in blood plasma, was noted in fatal cases and may be a dangerous sign as a lowering of the blood pressure, and a diminution in urine output will not alone explain the rise of non-protein nitrogen in acute coronary occlusion.

Each case is individual and must be treated as such. The prognosis depends not only on the degree and spread of the involvement of the myocardium, but also on the treatment and on the reserve strength of the heart. Careful nursing is a very helpful adjunct. After a few days, enemas and mild cathartics may be given if necessary. A liquid diet for several days is advisable as it is more easily assimilated. Levine^{8, 9} suggests quinidine sulphate grains three, two to three times a day, as a precautionary measure, for ten to fourteen days in attempting to prevent auricular fibrillation and ventricular tachycardia. In the weakened state in which we find the heart muscle in a case of coronary thrombosis, such further insults are almost always too great to withstand. Perhaps even grains three every four hours night and day, as quinidine is excreted^{20, 21} in that length of time, might cover the patient more effectively. The judicious use of alcoholic beverages¹⁰ is to be considered. Blood pressure reading twice daily is a constant guide to the condition of the heart muscle.

A month to six weeks is the least time one should consider keeping a patient in bed, following such an accident, for the balance between too much and too little restriction of life must be established. Then gradually the resumption of activities may be undertaken. Patients have been known to carry on following coronary occlusion, and do it very well, for a period of ten years or more. It has been shown¹ that two years following a coronary occlusion, 56 per cent were in good health; in ten years, 3.4 per cent were still alive.

The prognosis is lessened in coronary thrombosis by the following findings:²²

1. Advanced age.
2. State of shock.
3. Abrupt and pronounced fall in blood pressure.

4. Prolongation of severe substernal pain for more than two to three hours.
5. The duration of fever for more than a few days.
6. The presence of a high fever (103-104° F.) or a high leukocytosis (especially if maintained for a week or more).
7. Rapid and marked cardiac dilatation.
8. Gallop rhythm.
9. Ventricular paroxysmal tachycardia.
10. Heart block.
11. Pulsus alternans.
12. Cardiac asthma.
13. Congestive failure.
14. Embolic phenomena.

SUMMARY

With the present day available information, coronary thrombosis, which frequently presents symptoms suggesting acute indigestion, should be recognized in the large percentage of cases.

1. A careful history frequently gives the keynote of the diagnosis.
2. Thoughtful evaluation of the laboratory tests and electrocardiographic tracings are distinct aids.
3. It is suggested that digitalis be avoided unless there is congestive failure, auricular fibrillation, or cardiac asthma. Quinidine sulphate may be given in the attempt to prevent a cardiac arrhythmia and, hence, add further insult to an already damaged heart muscle.
4. Absolute bed rest is recommended for a period long enough for the damaged muscle to heal.

5. Prognosis should always be guarded for it is known that patients have lived more than ten years following a coronary occlusion.

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BIBLIOGRAPHY

1. Conner, L. A., and Holt, E.: The subsequent course and prognosis in coronary thrombosis. *Amer. Heart Jour.*, 5:705 (August), 1930.
2. Herrick, J. B.: Clinical features of sudden obstruction of the coronary arteries. *Jour. A. M. A.*, 59:2015, 1912.
3. Herrick, J. B.: Acute obstruction of the coronary artery. *Northwest Med.*, 24:593-601 (December), 1925.
4. Hurxthal, Lewis M.: The appearance of T-wave changes in the electrocardiogram. *Arch. of Int. Med.*, 46:657-668 (October), 1930.
5. Hurxthal, Lewis M.: Identification of the separate components of the QRS complex. With special reference to the so-called prominent Q-wave in Lead III. *Amer. Heart Jour.*, 9:No. 2 (December), 1933.
6. Jamison, S. C., and Hauser, G. H.: Angina pectoris in a youth of eighteen. *Jour. A. M. A.*, 85:1398, 1925.
7. Levine, S. A.: Coronary thrombosis. *Medicine Monograph*, Vol. 16, William and Wilkins Company, Baltimore, 1931.
8. Levine, S. A.: The treatment of acute coronary thrombosis. *Jour. A. M. A.*, 99:1737-1740, 1932.
9. Levine, H. D.: Effect of quinidine sulphate in inhibiting ventricular fibrillation. *Arch. Int. Med.*, 49:808, 1932.
10. Levine, S. A.: Coronary artery disease. *The Journal-Lancet*, 1933.
11. Levine, S. A., and Tranter, C. L.: Infarction of the heart simulating acute surgical abdominal conditions. *Am. Jour. Med. Sci.*, 104:57, 1918.
12. Libman, E.: *Medical Record* (New York), 89:124, 1916.
13. Libman, E.: *Trans. Assn. Am. Phys.*, 34:138, 1919.
14. Obratzow, W. P., and Strashesko, N. C.: Zur Kenntnis der Thrombose der Koronararterien des Herzens. *Ztschr. f. Klin. Med.*, 71:116, 1910.
15. Pardee, H. E. B.: Clinical Aspects of the Electrocardiogram. Paul B. Hoeber, Inc., Third Edition, 1933.
16. Rabinowitz, M. A., et al.: The red cell sedimentation time in coronary occlusion. *Amer. Heart Jour.* (October), 1931.
17. Schaps, L.: Ein Fall von spontaner Herzruptur bei einem Säugling. *Arch. f. Kinderheilk.*, 40:126, 1905.
18. Sprague, H. B.: Coronary occlusion. *Nelson Loose-Leaf Living Medicine*, 4:430.
19. Sternberg, C. LeR.: Serial NPN studies and their prognostic significance in acute coronary occlusion. *Jour. A. M. S.*, 186:No. 3, 738, 372 (September), 1933.
20. Wedd, A. M.: Some observations on quinidine. *Med. and Surg. Year-Book*, 1:163, 1929.
21. Wedd, A. M., and Hubbard, R. S.: Dosage and excretion of quinidine sulphate. *Clifton Med. Bull.* (April), 1929.
22. White, P. D.: *Heart Disease*. The Macmillan Co., New York, 1931.

MICHIGAN'S DEPARTMENT OF HEALTH

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NEW LOW RATES FOR 1933

Birth, death, and infant mortality rates in Michigan again dropped in 1933, bettering even the record-breaking rates of 1932.

The death rate for 1933 was 9.6 per 1,000 of population, as compared with 9.7 for 1932. The number of deaths registered during the past year was 48,507, a decrease of 1,062 under the 49,569 reported in 1932. With the exception of 1918, the influenza year, the highest death rate for the past twenty-five years was 14.2. Since 1929 it

has fallen steadily, reaching its lowest point in 1933. That a rate as low as the present one can continue indefinitely seems scarcely possible since it would presuppose that a material proportion of the population would live to be one hundred years and over.

The birth rate for 1933 was 16.0 per 1,000 of population in contrast to the 16.6 of 1932. The number of births registered last year was 80,481, a decrease of 4,773 under the 85,254 of 1932. Twenty years ago the Michigan birth rate was above 26

per 1,000 population, and as recently as 1927 almost 100,000 births were registered. The rate has declined more than one-third in the ten year period from 1924 to 1934. This downward trend of the birth rate has been general throughout the United States and in many foreign countries.

The infant mortality rate was 50.8 per 1,000 living births, in marked contrast to the 54.3 of 1932 and the 157.1 of 1900. The number of deaths of infants under one year of age in 1933 was 4,092, a drop of 538 from the 4,630 deaths in 1932.

Of particular interest in infant mortality was the fact that the rural rate decreased more than the urban one. The rural rate was 47.3 in 1933 compared with 54.4 in 1932 and the urban rate (cities of 2,500 and over) in 1933 was 52.5 in contrast to the 54.3 in 1932.

All but four of the larger cities of the state showed decreases in their infant mortality rates for the year. A number of the cities and their comparative rates follow:

	1933	1932
Ann Arbor	51.7	53.0
Battle Creek	56.0	69.6
Detroit	50.9	52.0
Flint	59.4	61.5
Grand Rapids	53.3	39.8
Hamtramck	67.7	43.4
Highland Park	26.6	48.3
Jackson	61.2	62.6
Kalamazoo	49.1	55.3
Lansing	63.1	50.6
Marquette	65.0	93.3
Monroe	40.2	41.0
Muskegon	46.7	55.2
Pontiac	50.7	57.7
Port Huron	66.5	47.9
Saginaw	45.8	65.4
Wyandotte	41.9	69.1

COMMUNICABLE DISEASE NOTES

For the first two months of 1934 the only disease showing any significant increase over the same period for 1933 was pneumonia. There is some question as to whether this increase has any great significance. There were 1,146 cases of pneumonia reported in 1934 as compared to 963 in 1933.

The total number of cases of scarlet fever for January and February is practically the same as for the same period in 1933. Both years have shown quite a high incidence. The communities affected are somewhat different this year as compared to last year. The larger population centers in this group are Flint and Genesee County, Mus-

kegon, Kalamazoo County and Lansing. A number of other smaller communities have also been quite severely affected.

The incidence of smallpox continues extremely low. For the first two months of last year only four cases were reported. This year there has been a total of seven cases.

Although this is not the poliomyelitis season, there has been a slight increase in the incidence. This does not appear significant because of the small number. For the months of January and February, 1933, four cases of poliomyelitis were reported as compared to seven for the same period of this year.

Typhoid fever is slightly under the incidence of last year at this season.

Diphtheria is materially less for the first two months of this year, there being ninety-eight cases reported as compared to 185 for the same period of last year.

Whooping cough is somewhat under last year's record and measles shows about one case for every ten reported a year ago.

AMEBIC DYSENTERY

Cases of amebic dysentery which originated in Chicago during the summer season of the Century of Progress Exposition continue to come to light. Twenty-four cases have been reported in the state since January 1, 1934, making a total of sixty-five cases, of which forty-seven are thought to have acquired their infection in Chicago.

Physicians should remain on the alert and consider the diagnosis of amebic dysentery in all cases of more or less chronic enteritis, especially those showing a mucopurulent diarrhea and sometimes the presence of blood.

It appears that the cause of the Chicago outbreak has not been definitely settled. The explanation advanced and considered most probable by Chicago authorities is that of water pollution caused by a cross connection between water supply and sewage disposal in the basement of one of the Chicago hotels. This condition was remedied some time ago. We would call attention to the article on amebic dysentery in Chicago which appeared in the February 3 issue of the *Journal of the American Medical Association*.

C. D. B.

THE JOURNAL

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EDITORIAL

A MATTER FOR SERIOUS STUDY

We have emphasized from time to time the importance of unity of the medical profession as evidenced by full and active county society membership. The times demand preparedness and this means an intelligent comprehension of the situation which confronts medicine today, along with other professional as well as industrial and economic activities. The problem is one of adjusting ourselves to conditions which few or none of us could have anticipated a decade ago. One may adopt a Fabian attitude and play a waiting game. That is what most of us have been doing—probably the easiest way, because standpatism requires very little mental effort. The alternative is to study the trend of the times. Individualist though the majority of us may be, a good mental exercise would be to inform ourselves on what socialism really means. The editor of the *Journal of the American Medical Association* in a recent address told us that of the twenty-two planks in the socialist platform of 1912, all but two had been already adopted. We are too prone to label what we don't like with a name and to leave it at that. The subject should be approached with as little emotion as possible, which is a difficult matter, however, considering that one's livelihood is involved; it is hard to be impartial where one's existence is at stake. Nevertheless the necessity is urgent.

We have no definite plan to offer, yet some definite proposition is necessary. The Michigan State Medical Society has been a pioneer among states to give the matter of survey of health agencies serious thought, as already made public in the carefully prepared report presented at the annual meeting at Grand Rapids, and the continuance of study of the problems by the committee on Medical Economics. A serious effort has been made to obtain first-hand knowledge of the social and economic phases of medicine as experienced in Great Britain. The findings of the Committee on Economics sooner or later will be presented to the House of Delegates, who, after mature deliberation, will doubtless have some concrete plan, or will determine upon some course of action.

We referred to the subject of socialism. Anyone interested in knowing what socialism really is cannot do better than study two books: one by Markham dealing with the *History of Socialism*. This is an impartial narrative by an Oxford scholar. It can be recommended as one of the best accounts in a single volume of a little over three hundred pages. The other, *Individualism and Socialism*, by Kirby Page, is a biased work, but is valuable for the doctor as it contains a vast amount of documented data, largely a criticism of the evils of capitalism. In our opinion a volume of equal size might be written setting forth the merits of individualism and capitalism.

However, one should bear in mind that whichever he favors, socialism or individualism, his position or mental attitude is never unassailable until he knows the arguments and can appreciate the attitude of his opponents. As already intimated, we are on the threshold of a new era in medicine as well as in human society in its broader aspects. The approach of the average thoughtful physician to the problems of his profession is beset with difficulties. He cannot long continue under present conditions. And yet any plan of medical service already in operation falls short of meeting the situation in anything like an ideal way. The objective is to render medical service of high quality at a price all can afford to pay, and at the same time avoid eliminating physicians from the practice of medicine at a time of life at which it is too late to turn to some other means of earning a livelihood. This causes many of the older men in the profession to approach the subject with a con-

servatism that shows little or no effort towards constructive action on any large scale.

The problems are too large, however, and the need for action too pressing to be postponed indefinitely.

MEDICAL SOCIETIES DELUXE

Our nearest neighbor, the *Journal of the Indiana State Medical Society*, contains a very interesting editorial on this subject. The county society is the long established unit in medical organization. It is the organization closest to the doctor, be he general practitioner or specialist. For this reason the JOURNAL OF THE MICHIGAN STATE MEDICAL SOCIETY has always stressed the importance of a county society membership that embraces every eligible and qualified physician in the county. In the large centers of population, however, where doctors are more or less accustomed to limit their field of practice, there have sprung up special societies which are designated de luxe. There is a place for them, inasmuch as they are concerned with phases of medical and surgical practice of a technical nature which are not of general interest. The technic of a gall bladder operation would have very little appeal to the eye specialist and the dosage of treatment by x-rays or radium or the *modus operandi* of producing radiographs of diagnostic detail would be of no interest whatsoever to those physicians not actually engaged in radiology, hence the importance of the special group within the county society. The fact should not be forgotten, however, that all these institutions should be subordinated to active interest in the county organization.

Then again these auxiliary societies are wont to impose fees varying from five to twenty dollars on their members in addition to the regular membership in the county society, which is an unwarranted burden at a time when every physician and surgeon finds his income reduced by the amount of service he renders gratuitously. In the majority of these societies the only expense entailed is that of sending a letter or postcard each month to notify the members of the time, place, and program. Where such organizations are found a necessity an effort should be made to reduce the expense connected with them and their number should be sufficiently infrequent as to allow the physician an occasional evening at home with his family.

HOME CARE OF TUBERCULOSIS

It is unquestionable that a properly managed sanitarium affords the best advantages for the successful recovery of the tuberculosis patient. The reasons are obvious: equipment, a highly specialized medical and surgical staff, proper diet and rest. The means of accommodation, however, are still not adequate to meet demands, so that waiting lists are in many places the rule. Sometimes patients are required to wait from six to eight months for admittance, during which time the disease may gain so much headway that successful treatment is an impossibility. Such patients will require careful supervision and treatment in their own homes. Then there is the patient who has had sanitarium treatment, and the schooling that the institution affords, who may be safely dismissed but who requires to be kept under observation. Certain pneumothorax cases when they have had their "refills" may be treated satisfactorily at home. Where possible one to two months' sojourn in a good sanitarium is highly desirable to acquire the fundamentals, so that the patient may cooperate intelligently with the doctor.

An interesting brochure is being prepared on the subject of home treatment of tuberculosis patients, dealing with such subjects as patient's quarters, the patient, bed period, fresh air, cleanliness, diet, temperature and pulse. The brochure is being prepared by a committee of the National Tuberculosis Association consisting of Dr. A. M. Wehenkle of Detroit, chairman; Dr. Woods Price of Saranac Lake and Dr. D. R. Lyman, superintendent of the Tuberculosis Sanitarium of Wallingford, Connecticut.

This is in line with the movement towards the practice of preventive medicine by the general practitioner, and physicians are therefore urged to turn their attention to the care of this class of patient, which has been of recent years considered amenable to sanitarium management only.

MEDICAL HISTORY

The Woman's Auxiliary has grown to be an important institution in connection with medicine in Michigan. In addition to the social feature, which is very important, the record has been one of accomplishment. Mrs. J. M. Robb, of Detroit, conceived the idea of a plan of study of medical history by

doctors' wives, and under her direction a successful course has been presented to the auxiliary members of Wayne County. The large enrollment as well as attendance of members has proved beyond a doubt the popularity of the venture.

The auxiliary meetings were held on the same evenings as the scientific sessions of the medical society so that husbands and wives came together; each, however, attended his and her own program. The first series (we say first, for surely this is only a beginning of a number of such courses) constituted a survey of the subject from the earliest times to the renaissance. The course comprised six lectures given by well informed members of the medical society, namely, The Outline from Imhotep to Harvey by Dr. Lawrence Reynolds, Egyptian Medicine by Dr. Frank Sladen, Greek Medicine by Dr. E. D. Spalding, Roman Medicine by Dr. W. J. Stapleton, The Legacy of Arabian Medicine by Dr. L. M. Sa'di and the Italian Renaissance by Dr. H. W. Plaggemeyer. A number of the doctors, together with the editor, could not resist the temptation (surreptitiously of course) to occupy the back seats. Each speaker did himself justice and all the presentations were brilliantly prepared. At each successive meeting a member of the Woman's Auxiliary presented a synopsis of the preceding lecture which showed very commendable ability in grasping the salient features and in summarizing the address. The Wayne County Auxiliary is, we presume, the largest in the state. There is every reason, however, that smaller groups of women would find such courses fascinating and there are doctors everywhere who would be only too pleased to give the talks.

MAX BALLIN

When the medical history of the early periods of the twentieth century is written, no name will stand out in more heroic proportions than that of Max Ballin. Surgeon, Consultant, Pathologist, Citizen, he epitomized those qualities of mind and heart that only the truly great possess. The State of Michigan and the City of Detroit particularly, may ever point with pride to him as one who possessed those exquisite traits of leadership that made him a much honored member of the medical profession.

It would be idle to repeat in detail his

achievements in the surgical field. Outstanding are these facts: that Doctor Ballin was one of the very first in the world to demonstrate the surgical indications of, and to operate upon, hyperplastic and adenomatous goiter; in the field of brain and cord surgery his pioneer work attracted wide attention; his last and great achievement was the demonstration of the relationship of the pathology of the parathyroid gland to calcium metabolism and diseases of the osseous system. All of these stand out as landmarks in his wide and colorful surgical career.

There was nothing of the trite in his investigations or writings. His contributions to surgical technique and medical literature were not great in number, but each and every one of them were original in their conception, or new in their method of approach. They displayed a profundity of knowledge, a carefulness of preparation and a sincerity of statement that only come from a man of great experience, of wisdom and of conviction.

The recognition of his worth was national, not alone through medals and citations, but references to his works that appear in surgical and medical literature bear testimony to this fact. In his own sphere Dr. Ballin inspired and stimulated his associates, who always found in him one eager to assist, advise and encourage. Withal he was gifted with a rareness of judgment possessed by few men. Whether at the bedside or in the operating room this ever stood out as one of the attributes of his ability.

There was a magnetic quality to his personality; his smile, his quick retorts, his genial quips, his lovable assurances were the outward expressions of a sturdy heart that beat with sincerity, sympathy and devotion. To these traits were added a dignity and modesty which not only attracted all who met him, but also endowed him with a power of true leadership.

The background of this noble character was a cultural life and sense of appreciation of its realities. Dr. Ballin was a great reader, not alone of medical and surgical writings, but of good fiction. Besides English and German literature, he was familiar with French and Italian, which he spoke fluently. He enjoyed art, but particularly was he fond of the best in music. In all of these he found much diversion and comfort during the few leisure hours that he had for himself in his busy career.

The loss that the medical profession and this community have suffered cannot be measured in words or spoken in any eulogy. Dr. Ballin will be missed more as time speeds on, and as we begin to realize that he will not return. And only then, when trying situations arise and difficult problems confront us, will we reflect, and recount those acts of judgment, those expressions of faith, that courage, sympathy, tact and sincerity which made him a tower of strength in our midst and endeared him to us.

SPECTACLES

The invention of spectacles may be traced to northern Italy in the last quarter of the thirteenth century. Although the details are unknown, it seems fairly certain that the discovery occurred between 1280 and 1290, and the best authenticated evidence accredits the invention to either Salvino degli'Armati of Florence or to Alessandro della Spina, a Dominican monk of Pisa. Outside of Italy, glasses were used in China at about the same time, and there is some evidence to indicate that the Chinese invention was as early as the eleventh century. The establishment of any definite date, however, is impossible at present. Although the difference in the design of Chinese glasses attests to their independent development, they are of only casual historical interest, since they seem to have had no influence on the evolution of European glasses. With the establishment of regular commercial relations between the East and the West, the superior spectacles of European manufacture soon superseded the native Chinese product.

Glasses as aids to vision were a natural outgrowth of the studies of Grosseteste (c. 1175-1253) and the other thirteenth century scholars, Witelo, Peckham, and Roger Bacon. These men analyzed the Greek and Arabian theories on visual and luminous rays together with the early work of Galen and Ibn al-Haitham on the eye, and of Ptolemy and Euclid on the principles of refraction and reflection. Experiments with burning glasses showed that print was magnified through their use, so that, in a sense, the adoption of lenses of low convexity for the correction of old age visual defects was an adaptation, rather than the discovery of a principle.

Since convex lenses were the first type to

be used, glasses for the correction of presbyopia preceded other kinds. Commonly in fitting glasses, lenses of several distinct degrees of convexity were employed, the more convex grades being prescribed in relation to the increasing age of the wearer. In the first systematic treatise on spectacles by Benito Daza de Valdez (1623), it appears that lenses of still greater convexity were in use as cataract glasses. Concave lenses which had been known since the time of Bacon subsequently came into use. A remark by Cardinal de Cusa (d. 1464) and another by Barbaro (1568) indicate that they were in use during the lifetimes of these men, although the first clear description of concave lenses was that of John Archbishop of Canterbury in 1593.

The clergy seem to have been the first spectacle makers, though guilds of laymen were probably the first extensive producers. The spectacle makers' guild of France was in existence in 1465 and that of England by 1563. After the decay of the guilds, mendicant peddlers provided glasses, but from the seventeenth century on, the optician became the most important agency for distributing glasses.

Glasses during the first decades of their use were made of ground and polished transparent gem stones, such as topaz, rock crystal, or most frequently beryl. These reading stones were thought to be the only lenses which would not injure the eyes. The prohibitive cost of reading stones led to the introduction of glass lenses, but makers of lenses were compelled to indicate the presence of the presumably inferior material in their product. The early glass was a mixture of substances, the characteristics of which varied from sample to sample. The mineral impurities led to opalescence or colored tints, and pure silicate glasses, such as crown and flint, were not available before the eighteenth century. The conscious introduction of specific impurities into the glass produced glasses of definite color. Reading glasses with green lenses were manufactured in 1561 by the Englishman, Aucott; Pierson of London sold blue reading glasses; and Adams in 1767 advertised smoked glasses. During the nineteenth century, amber lenses, chlorophyll green and amethyst glasses were produced till, at present, many colors and varieties of glass are used in lenses.

The early convex and concave lenses un-

derwent little modification until the eighteenth century. In 1784, Benjamin Franklin produced bifocal glasses in which the upper half of the lens was adapted for far vision and the lower half for close accommodation. Various technical refinements of the bifocal principle appeared somewhat later. In 1826, Hawkins of London devised the less commonly used trifocal lenses. In 1866, Samuel Gregg produced a bifocal by cementing a small segment into the lower part of the distance glass. Later, a thin scale with a knife edge was cemented with balsam to the surface of the distance glass as a modification for close focus. This glass, known as the *opifex*, was modified about 1890 by Borsch of Philadelphia to form the *kryptok* lens. In this, the thin scale was cemented between two large pieces of glass. Shortly afterward, Borsch fused the glass by heat, the difference in refraction of the two parts of the lens being produced by the use of both crown and flint glass. Still more recently, the two parts of the bifocal lens have been ground from one piece of crown glass.

Since the adoption of glasses for the correction of myopia and presbyopia, the most important innovation for the improvement of vision has been associated with the correction of astigmatism. In 1801, the characteristics of astigmatism were first outlined by Thomas Young. He found that astigmatism could be corrected by tilting the lenses of the glasses in one direction or another. Independently and about twenty-five years later, George Airey worked out the method of compensating for astigmatism, and in 1827 the English optician, Fuller, provided him with cylindrical lenses. Lenses of this type were soon common, as were spherocylinders, which were first produced by the American optician, Zentmayer.

Wollaston in 1804 devised the first periscopic eye-lenses, which were constructed for him by Dollond. This glass was designed to obviate the necessity of looking obliquely through the peripheral part of the ordinary lens and consisted of a lens with an anterior convex surface and a posterior concave surface. Somewhat later, the grinding of periscopic lenses for the correction of compound astigmatic and accommodatory defects led to the type of lens called *toric*. Some attention has been given to glasses for the correction of grosser eye defects. The use of prisms for the correction of squint

was suggested during the middle of the nineteenth century. Hyperbolic lenses for conical cornea and irregular astigmatism were proposed in 1879 by Raehlmann. For the correction of extreme myopia or hyperopia, lenticular lenses in which the correction lens occupies only the central part of the glass have been devised. Bifocal cataract glasses were another development for unusually defective eyesight.

Various shapes of lenses have been popular. The earliest lenses were circular and later elliptical, and, although the oval or elliptical lens has remained the most popular type, many irregular shapes, such as crescents, octagons, or circular lenses with flattened tops, have also been common. The size of lenses and the materials for the construction of frames have been considerably modified in accordance with style trends.

If attention is turned to the method by which lenses are held before the eyes, it is to be noted that there is a gradual adaptation of frames to the anatomy of the nose and face, and likewise that popular fancy has led to the predominance of one type or another at various times. The first glasses consisted of two large lenses conjoined by an immovable frame of leather, bone, ivory or metal. These were held in the hand by the upper or lower portion of the rim. Sometimes glasses were suspended on cords over the ears. A modification of the solid construction of the frame appeared during the fourteenth century when the two lens glasses were hinged over the region of the nose, or were connected by a piece of spring metal. About the middle of the eighteenth century, crude glasses maintained with bows or temples, technically spectacles, were constructed. At first, the temples ended in a plate or ring in front of the ears, while later, they extended behind the ears to press against the occiput. Next, a short piece of metal was jointed to the temple in such a way as to hook behind the ear. With the hingeing of the bows to the spectacle frame to permit folding, spectacles not unlike the modern types came into use. Rimless spectacles, in which the bridge and bows were clamped and screwed to the lenses, were constructed about 1840 by Waldstein of Vienna. Rimless spectacles with hook temples called "riding bows" appeared in England about 1850. The later adaptation of a saddle bridge to distribute the weight of the spectacles on the nose and the offset

guard led to essentially modern spectacles; the most recent developments have been the perfection of movable guards on a semi-flexible bridge and the higher placement of the bows on the lens.

During the past century, glasses without bows, technically called eyeglasses, have vied in popularity with spectacles. The problems of eyeglasses have centered on the lightness of weight and ease of attachment to the nose. The American opticians have in large part been responsible for the technical advances in eyeglass construction. In 1868 McDonald of Newark and Bausch of Rochester devised eyeglasses which were clamped to the nose by a spring arrangement. Self-adjusting guards with a nose-piece oscillating upon a pivot attached to the eye wire were invented by Clements in 1871. Other rocking guards were constructed during the next decades, along with devices for holding the glasses with precise adjustment before the eyes. The more recent developments of eyeglasses have followed two lines: in the first, the glasses are maintained by the springiness of the bridge; in the other, the bridge is stationary while the guards are movable. In the latter, or finger-piece eyeglass, the guards are manipulated by means of levers.

In the earlier period of the development of reading glasses, two factors were responsible for the limited use of glasses: the illiteracy of the lower classes rendered glasses superfluous to many, and their high cost (perhaps \$200) made them inaccessible to others. As a consequence, glasses came to be a sign of social or intellectual position. Portrait painters of the renaissance period adorned their subjects with spectacles, sometimes even painting the early saints with anachronistic glasses. The increasing use of the spectacle during the seventeenth and eighteenth centuries, often an affectation, led to the satirizing of wearers of glasses. Hogarth and other artists used this affectation as a fit subject for caricature, nor did writers overlook this opportunity as these stanzas from William Cowper indicate:

"Between the Nose and Eyes a strange contest arose,
The spectacles set them unhappily wrong;
The point in dispute was, as all the world knows,
To which the said spectacles ought to belong."

After due argument on the point, a decision was reached,

"So his lordship decreed, with a grave solemn tone,
Decisive and clear, without one if or but—
That whenever the Nose put his spectacles on,
By day-light or candle-light—Eyes should be shut."

Even today, the theater, the cinema and the cartoonist use glasses consistently for characterizing certain types.

Physicians in the earlier days of spectacles discouraged the use of glasses, and the medical recognition of glasses was rather late. Bernard Gordon of Montpellier, the first physician to mention glasses (1305), considered them unnecessary, if his own eye remedies were used. The famous renaissance surgeon, Guy de Chauliac, recommended glasses only in the event that his eye lotion did not cure the visual defect. George Bartisch, a famous German ophthalmologist, condemned their use in his textbook (1583), and von Arlt, during the past century, was the first important ophthalmologist to recognize the therapeutic importance of glasses. The recognition of astigmatism as a factor in eye strain had much to do with the increase of medical interest. The invention and perfection of the ophthalmoscope, the discovery of cycloplegic drugs and the publication of the fundamental studies of Donders in 1864 on the refraction and accommodation of the eyes preceded the universal acceptance of the importance of glasses. With the increasing medical application of glasses, systems of numbering lenses have appeared. According to the most important systems in use prior to the last decades of the nineteenth century, the effect of the lens was the reciprocal value of its radius of curvature. More recently, the focal distance of the lens in relation to a standard lens having a focus of one meter has been the most popular system. Thus, a two diopter lens, one twice as strong as the standard, has a focus of one-half meter.

Although glasses have been known for more than six centuries, the scientific status of ophthalmic lenses and the technical adaptation of glass and frame to the comfort and convenience of the wearer have been developments of the last hundred years. Medical interest in glasses has coincided only with the latter period.

Three faces wears the doctor: when first sought
An Angel's; and a god's, the cure half wrought.

But when, the cure complete, he seeks his fee
The devil looks less terrible than he.

—Anon.

"Throw twenty small objects such as beans on the floor, pick up one at a time and place on a shelf above the head using the hands alternately. Do it as quickly as possible." This is a recommendation for the treatment of Essential Dysmenorrhea in the newly revised work "Treatment in General Practice" by Beckman. Oh if women only wore collars the exercise might be varied by the morning hunt for collar buttons under the bed.

We are privileged to print the Beaumont Foundation lectures for the third time. These addresses on scientific subjects basic to medicine without exception have been given by men of erudition—leaders in their fields of thought and research. Dr. Fulton's second lecture will appear in the May number of the JOURNAL. Given each year before a large audience of the Wayne County Medical Society, they are here available to every member of the Michigan State Medical Society.

The radio, one of the greatest triumphs of physical science, is sometimes prostituted to the most unscientific purposes, intruding as it does with its ballyhoo into the sanctity of the home. We hesitate to say what would happen to the person who would blow into the family circle and begin bellowing the claims of someone's panacea for all the ills that flesh is heir to. The messenger is one of the wonders of the age: the message is too frequently pure bunk, as much as we hate the word.

The popularity of medical service, so called, is attested by the fact that every one tries to get in on it. Even departmental stores find it a lucrative business inasmuch as one, at least, in this state has circularized the medical profession regarding the installation of a complete prescription service, though this store has not announced whether this service will be rendered nights, Sundays, or holidays. The department store is probably trying to get back at the druggist who specializes in soap, sandwiches, ice-cream, alarm clocks and what not.

One member of the Michigan State Medical Society has a proposition for increasing the advertising patronage of this JOURNAL. Upon a visit from the detail representative of drug houses he turns to the advertising pages of the JOURNAL and if the firm is represented the detail man is accorded a favorable reception; if not, he is politely requested to report the non-affective interview to his employer. If this attitude were generally adopted a larger and better JOURNAL would be the result. A State Medical Journal is the property of the organized medical profession of the state, and its size in particular is determined by the amount of revenue from its main source, advertising.

TO BE SUCCESSFUL

FAMILY PHYSICIAN

Don't treat something you do not understand without expert advice.

Don't fail to be frank with your patients.

Don't fail to talk their language.

Don't fail to write out instructions.

Don't fail to consult the nurse on the case.

Don't talk shop to patients.

Don't tell patients how good you are.

Don't fail to have outside interests.

Don't have financial dealings with patients.

Don't keep moving from town to town. Select your location carefully and then stick.

Don't fail to show the spirit of service.

Practice:

Firmness, fairness, and frankness with the patient, but do not show temper.

Accompany the patient to the specialist's when possible. A personal introduction goes a long way and the specialist would benefit greatly by the added conference with you while on the case.

Be neat and clean in your personal appearance.

Give more time to the *convalescent* stage of the disease.

Show cheerfulness and encouragement in your work.

Be fair to your professional rivals.

SPECIALIST

Don't work alone. Find out who the family physician is when possible.

Don't fail to have close contact with the family physician.

Don't omit the written reports to the physician.

Don't disregard the patient's story.

Don't protect the family physician when gross negligence is evident.

Don't necessarily form conclusive opinion on single visit evidence.

Don't object to a second opinion in obscure cases. Don't overcharge.

Don't fail to show the spirit of service.

Be considerate of patient's and family's reactions to your opinions. Select your words with care.

During an extended examination observe carefully the patient's condition lest a too fatiguing conference be held.

Don't send patients home from office operation on the elevated when they request a taxi.

—*New England Journal of Medicine.*

DR. J. W. HANDY HONORED

It is somewhat infrequent that members of the medical profession are given the opportunity to honor one of their number who has spent half a century in the practice of medicine. Such honor, however, was accorded Dr. John W. Handy, of Flint, on Valentine day by the Genesee County Medical Society,



DR. J. W. HANDY

which tendered him a complimentary dinner. Dr. Handy's practice began and for many years he carried on when his means of locomotion, besides a pair of good sound legs, was the horse and buggy in spring, summer and fall, and horse and cutter in winter. Dr. Handy is proud to be known as one who loves horses and dogs. He places a high value on the companionship of both and, it goes without saying, he always showed the greatest kindness towards them, even providing euthanasia when old age had rendered these animal friends no longer useful. The doctor has long emphasized to his patients the importance of proper living. There is an old saying (we will find it somewhere in Shakespeare), "It were easier to tell twenty men what were best to be done than to be one of the twenty to follow mine own instruction." Dr. Handy has been one of those peculiar members of the medical profession who has followed his own instruction. Hence,

* * * * * he is strong and lusty;
For in his youth he never did apply
Hot and rebellious liquors in his blood,
Nor did he with unbashful forehead woo
The means of weakness and debility;
Therefore his age is as a lusty winter,
Frosty but kindly.

He graduated from the University of Michigan School of Medicine in 1884 and, after a year's practice at Hartland, moved to Genesee County where he has practiced ever since. Dr. Ray Morrish, president of the Genesee County Medical Society, presided at the dinner. Besides Dr. Handy's address, toasts were responded to as follows: Fifty Years of Medical Progress by Dr. W. H. Winchester, Aches, Pains and Groans by Dr. Charles H. O'Neil. THE JOURNAL OF THE MICHIGAN STATE MEDICAL SOCIETY joins in extending congratulations to Dr. Handy.

SOCIETY ACTIVITY

SPECIAL MEETING HOUSE OF DELEGATES

March 9, 1934.

To Secretaries of County Societies and Delegates of the 1933 Annual Meeting.

Official Call for Special Meeting of the House of Delegates

Gentlemen:

Please be advised that there will be a Special Meeting of the House of Delegates of the Michigan State Medical Society in the Auditorium of the Hurley Hospital in Flint on *Thursday*, April 12, 1934, at 10:00 A. M. (Fast time).

The purpose of the Special Meeting is: "To receive and consider the Report and Studies of the Committee on Medical Economics and to give instructions to the Committee as to its further duties and activity."

Delegates elected and appointed to represent County Societies at the 1933 Annual Meeting in Grand Rapids shall constitute the delegates to this special session. In the event that the delegate representing a County Society at the 1933 Annual Meeting is no longer eligible to serve or is unable to attend, County Societies shall elect a delegate to serve in that capacity.

County Secretaries will provide delegates with a credential certifying that the delegate is duly authorized to represent a County Society. Delegates will present their credential to the Credential Committee in order to be seated.

By Direction of the Council
B. R. CORBUS, *Chairman*
G. L. LE FEVRE, *President*
H. A. LUCE, *Speaker*

Attest:

F. C. WARNSHUIS, *Secretary*
Grand Rapids, Michigan

Delegates are reminded to bring their credentials to be given to the Credential Committee in order to be seated at the special meeting. Your county secretary will give you a certificate stating you are an accredited delegate.

No other business, unrelated to the business stated in the call, can be introduced at the special meeting.

THE DOCTOR LOOKS AT PUBLIC HEALTH

People by and large are demanding more and more preventive medical service. Parents are learning that their children should be protected against smallpox and diphtheria and each year there are more people who appreciate the value of a periodic health examination. Without developing a health phobia the average citizen has discovered that it is profitable to keep the human mechanism in good working order; he has learned that it is easier to prevent than to cure tuberculosis; he has learned that with good prenatal and infant care twenty children out of every 100 born should not die during the first year of life.

This demand for preventive medicine must be filled. The research laboratories and the clinicians are providing the newer knowledge in sanitary science and now the public insists upon adequate service. This need can be provided by either building up a large full-time medical personnel operating under the direction of some public organization such as a health department or provision may be made by coöpting the services of the rank and file of physicians in private practice. The manner of preparing and regulating the qualification of such practicing physicians was discussed in the January issue of this Journal.

Now, what of the advantages of preventive medical service in the physicians' office rather than in public clinics! If there be such advantages, they would accrue to the public, the health agency of the community and to the physician.

The medical practitioner of tomorrow must be well versed in the art and practice of health education if he is to serve his clients to the maximum. It is well recognized that there is no rigid line of demarcation between preventive and curative medicine. To best serve his patient when ill the physician should have complete knowledge regarding the physical and mental stamina of his client when in normal health. We all recognize the value of moderation in our habits of life. Over-indulgence in palatable foods may well be an underlying factor in our increasing mortality from the degenerative diseases of late life. Hygienic supervision of the life habits of the layman by the family medical counselor is a goal worthy of attainment. There are some who

exercise too little, there are others who over-exercise. Some businessmen obtain too little sleep, others continue victims of a lethargic abnormality. It is the family physician in private practice working in his own office who, with reasonably complete information concerning the well-being of his client, should become the moderator in matters of personal hygiene. If the physician of the future serves as a health educator he will materially expand the influence of the local health agency with advantage to family and public alike.

The surest way to reduce the cost of illness is to prevent its onset. A satisfactory way to enhance the monetary return to the physician is to increase his services in the preventive field. When in good health the patient is more inclined and better able to pay for medical services. The truth of this statement is borne out by experience in Detroit, where during the past three years, due to the reduction in the diphtheria death rate, it is estimated that the physicians of the community have lost \$60,000. This figure is based upon an assumed cost of \$35 for each case of diphtheria treated. This loss would have accrued to the medical profession irrespective of whether free clinics were employed as a means of immunizing children of susceptible age or whether a program of medical participation had been adopted. Under the latter plan, however, the physicians have received, either through payment direct by the parent or through an honorarium provided by the Health Department, more than \$300,000. In other words, medical service has paid this group of 1,100 coöperating physicians five times as much as they have lost in curative medicine. This demonstrates very distinctly that to the physician preventive medicine is more profitable than curative medicine.

At the same time the public has gained. The average cost of a case of diphtheria is \$35; the average cost of prevention but \$3. Again the advantage in favor of preventive medicine is more than ten to one.

Not infrequently do we hear that there are too many physicians practicing in this country; that the field is already oversaturated. We feel sure that this is not the case, but rather do we believe that the physician in private practice has either ignored or overlooked the possibility of tilling and cultivating that virgin and unplowed field of preventive medicine. With proper em-

phasis upon the elimination of preventible illness there will not be too many but rather too few physicians.

What taxpayer is not alarmed by the cost in operating government? Huge sums are appropriated by the federal, state and local governments for the care, confinement and rehabilitation of individuals sick in body and mind. Every new case of diphtheria or tuberculosis will prove to be an expense to both the family and the public exchequer. Health officers and physicians have quite properly urged the expansion of hospital facilities for the care of those suffering from tuberculosis. Sanatoria are needed not only for the benefit of the patient but as a means of protecting the public health, by removing foci of infection and especially by providing an isolation of the open case of tuberculosis which might otherwise infect the children of the household and become a menace to the entire community. But as these new and modern facilities for treatment have been made available the cost to government has increased. We do not argue against the creation of such hospitals; they are needed as a means to an end. We do feel, however, that there should be a more energetic effort to find disease in its incipency, when the average period of hospital care will be greatly curtailed and where the chances of returning the individual to useful occupation will be much improved. How better can such a goal be reached than by integrating into the health program the physician in private practice, for it is to him that the great masses will turn in case of illness. The doctor must be aroused to his personal responsibility in public health work and he must be taught to recognize the early signs of tuberculosis. On the other hand, the public must be weaned away from the cults, the charlatans and the quacks of all descriptions. The professional relationship between family physician and the layman must be reactivated in the interest of preventive medicine. The practice of preventive medicine by the family physician will not only improve the income to the doctor but will reduce the cost to the individual and to government.

The Committee on Preventive Medicine of this Society has mapped out a program for the spring months with the hope that this work of professional participation will be carried to every part of the state. The Committee has already been represented at

nearly a dozen county medical society meetings in Michigan. These conferences are made possible through the courtesy of the W. K. Kellogg Foundation of Battle Creek and its President, Dr. Stuart Pritchard. The Foundation has adopted this plan as one of its major activities, realizing full well that one of the important ways of promoting the health of childhood is by integrating into the program of health education the potential resources of the medical and dental professions. The value of such an educational program has been well demonstrated in Barry, Eaton and Allegan Counties, where all local physicians and dentists are participating in the public health program. Recently, in the absence of the three health officers of these counties, who had gone elsewhere for a period of two weeks, the local health machinery of these counties was directed temporarily by physicians in private practice. There has been a cementing of friendship between the health workers and the professional groups. There has been an active awakening of public and professional interest in health education which is producing noteworthy results in the reduction of morbidity and mortality rates; the prolongation of human life with marked economic saving to the local people.

COMMITTEE ON PREVENTIVE MEDICINE
MICHIGAN STATE MEDICAL SOCIETY

REDUCING THE COST OF DRUGS

EDGAR E. POOS, M.D., F.A.C.S.

During these days of depression we hear a great deal about the high cost of medical care. Millions are being spent to find out what it is all about; no remedy has been suggested. If the medical profession would make an honest analysis of some of their troubles I think they would find they are to blame for quite a few of them, one of these being the prescribing of high priced drugs by their trade name instead of U. S. P. or N. F. remedies.

The people of the United States spend approximately \$715,000,000 annually for drugs and medicines; of this amount \$190,000,000 was spent for prescriptions or products purchased under the direct advice of a physician. Five hundred and twenty-five million dollars represents the amount spent by the public for self medication, of which \$360,000,000 was spent for what we col-

loquially call "patent medicine" of secret composition.

The average American family pays its doctor each year \$24; for drugs and patent medicines, chiefly the latter, \$25.00; for candy, \$37.00; tobacco, \$67.00; for passenger automobiles, \$150; for soft drinks, ice cream and chewing gum, \$34.00, and the average woman of the family spends \$25.00 per year for cosmetics. So the doctor is still in the "piker" class.

The close relation of pharmacy to medicine is perhaps nowhere better illustrated than the title "Doctor of Medicine," because medicine, after all, is the mainstay of the care of the sick.

The properly trained pharmacist is a specialist in the compounding of medicine; the physician, a specialist in the treatment of disease.

The public is best served when each confines himself to the art in which he is trained.

The two professions should coöperate willingly and effectively for the best results and service to the public.

Due to high pressure salesmanship and mass production many of the pharmacies have deteriorated into bazaar counters, and the physician into a dispenser of samples and a salesman without remuneration for proprietary houses, which helps pay big dividends for the latter while the physician wonders how he will pay his rent, at the same time raising the price of drugs to his patient.

In December, 1820, the first pharmacopeia was printed, standardizing remedies, doses and therapeutic actions, since that time there have been 21 revisions.

There are about 1,400 different drugs listed, which should meet the requirements of every case.

The National Formulary was added in the year 1888 and later 1905, the New and Non-official Preparations by the American Medical Association, after they had passed their Council on Pharmacy and Chemistry.

In the late eighties German Chemical exploitation was under way. American pharmacy and American sick were exploited by, and paid heavy tribute to the German chemical manufacturers, enriching them at the expense of the unfortunate sick. As the patents ran out, American chemists manufactured these remedies and saved American sick untold thousands. A comparison of prices tells its own tale as follows:

PROTECTED NAMES

Atophan	\$2.75 oz.
Aspirin .....	.85 oz.
Diuretin	1.80 oz.
Duotal	1.07 oz.
Luminal	6.20 oz.
Phenacetin .....	.63 oz.
Pyramidon .....	.82 oz.
Urotropin .....	.63 oz.
Veronal	3.00 oz.
Argyrol	1.50 oz.

NON-PROTECTED NAMES

Cinchophen	\$0.40 oz.
Acetosaliclyc acid.....	.15 oz.
Theobrom. Sod Salicyl.....	.30 oz.
Guaiacol Carbonate.....	.28 oz.
Phenobarbital	3.25 oz.
Acetphenetidine .....	.20 oz.
Amidopyrine .....	.44 oz.
Methenamine .....	.13 oz.
Barbital .....	.60 oz.
Argento-protein Mitis.....	.60 oz.

Adding to the cost of each of the above list you will find the non-protected names will cost one-third of those protected.

At the present time we are enduring an invasion by the Swiss under the Ciba label and also a French invasion of which you receive daily literature. When the physician and druggist cease to pay tribute to the proprietary manufacturers on the prescriptions, your patient will receive his prescription half price.

There are hundreds of trade marked articles which have been substituted for and are nothing more than official preparations with an advertised name.

PROTECTED NAMES

Mistol	2 oz.	\$.45
Peacock's Bromides	8 oz.	.75
Gardners Syrup H I.....	pt.	1.40
Tyree's Antiseptic P V.....	2 oz.	.30
Fellows Syr Hypophos.....	7 oz.	.72
Pepsincia (Fairchild).....	1 pt.	1.50
Aristol	oz.	1.80
Adrenalin Chloride Sol.....	oz.	.85
Creosotol	oz.	.69
Chloretone	oz.	.85
Calglucon (Sandoz).....	100 GN	1.10
Thiocol	oz.	1.50
Medinal	oz.	3.00
Resinol Oint.	3½ oz.	.80
Iodox	1 oz.	.38
Ovoferin	11 oz.	.75
Listerine	14 oz.	.61
Glyco Thymoline	14 oz.	.84
Tongaline	4 oz.	1.50

NON-PROTECTED NAMES

Aromatic Spray N. F.....	4 oz.	\$.50
Syr. Bromidorum N. F.....	16 oz.	.86
Syr. H. I. N. F.....	pt.	.50
Pulv. Antisep.....	pt.	.50
Syr. Hypophos N. F.....	pt.	.75
Ess. Pepsin N. F.....	pt.	.77
Thymol Iodide	oz.	.51
Sol. Epinephrine	oz.	.60
Beechwood Creosote	oz.	.21

Chlorbutonal	oz.	.59
Cal. Gluconate	oz.	.15
Potass. Guaicol Sulph.....	oz.	.26
Sod. Barbitol	oz.	.65
Co. Oint Resinol N. F.....	lb.	1.75
Stainless Iodine Oint.....	lb.	1.35
Liq. Ferr. et Mang. Pept.....	pt.	.60
Liq. Antisepticus N. F.....	pt.	.25
Liq. Antisept. Arom. N. F.....	pt.	.40
Elix Tonga and Salicyl N. F....	pt.	1.35

The interest of the firms introducing these protected named drugs is largely mercenary; they are seeking to supplant some tried remedy by advertising for profit.

The physician prescribing these proprietaries makes himself a selling agent without remuneration, at the same time introducing his patient to the folly of consulting a physician when he can get it over some cut rate counter without a prescription. Cut the huge cost of medical bills by prescribing the non-protected names, Chemical nomenclature U. S. P. or National Formulary preparations. Foster American art, science and industry.

SELF MEDICATION

These new remedies are usually brought out for their cash register value. Self medication crops up, because of the easily remembered name of the remedy. The patient remembers a catchy name as well as the doctor, reads the prescription and asks for 4 oz. Syr. Cocillana, 1 bot Ovoferin, 1 oz. ephedrine Sol., etc., etc. Any proprietary which was introduced as an ethical preparation may find favor with the medical profession, the druggist is offered free goods in four ounce bottles, to be displayed on his show case, and soon the patient is sold the preparation directly by the pharmacist. You may have observed that street cars carry the advertisement of this proprietary "endorsed and prescribed by your physician," which tells the patient that your service is not needed—to save the physician's fee when troubled with constipation, acidity, cough, colds, corns or flat feet.

Do you remember the time when nearly 25,000 gullible physicians endorsed a certain cigarette being less harmful to the throat?

Next the department store bargain counter or "thrift store" cuts the price to attract trade, and your patient's reaction is that the druggist is a robber and you, too, for prescribing a proprietary and charging an office fee, where the clerk back of the department drug counter can prescribe the same remedy at a saving of from \$3 to \$5. If the remedy

proves of benefit, the name is passed around all the family, relatives and neighborhood and you undoubtedly will wonder why patient does not return or blame the poor ethical druggist for counter prescribing. Let me recall the following names to you.

Listerine, glycothymoline, lavioris, Phillips milk of magnesia, bisodol, citro-carbonate, nujol, mistol, petrolagar, agarol, argyrol, mercurochrome, allonal, veronal, phenolax, unguentine, aspirin, luminal, pertussin with its free wooden tongue blades, syr. cocillana, irradiol A., various mineral oils, viosterol, Hinkel's pills and cod liver oils, anusol suppositories, unguentine, Lilly insulin, Squibbs adex tablets, mineral oil, etc., Fellows hypophos, Gudes pepto-mangan, Vicks products., etc., were all introduced and sponsored by the medical profession and are now to be found on the bargain counter of the cut rate department or thrift store besides often being advertised direct to the public.

Do you remember a nasal spray window display last winter, where the ailing patient is calling up the doctor, and he replies, "I always prescribe "mistol for colds"?"

It was cut-rate priced and showed how perfectly superfluous you and the druggist have become after you have introduced the mistol product for the Standard Oil Co.

You may now understand why some of your patients do not return; the druggist is discredited first, and, on second thought, the physician is superfluous. The average physician forgets all the materia medica and pharmacology he is taught in Medical School, but soon starts his post graduate training by circular information, or the manufacturer's agents discourse, rather than upon the U. S. P. and National Formulary.

The measure in which physicians will increase their knowledge of pharmacology and materia medica and dosage is the measure in which they formulate their own prescriptions. The more you do this the more helpful the pharmacist can be to you, especially the professionally minded pharmacist. There are still pharmacies today in which the physician can have full reliance and confidence. Pick your pharmacist.

Invite the ethical professional pharmacist to your medical meetings and talk over your problems together, as together you render a constantly growing health service in the interest of the sick.

I hope I have shown the medical profes-

sion how to cure one of their own ills, "Doctor cure thyself." If you don't, I do not know who will do it for you. Remember the "Ethical pharmaceutical of today often becomes the advertised "patent medicine" of tomorrow, and when you dispense that sample on your drug shelf with the name of the product all over the package you are introducing your patient to self medication and the folly of seeing you again.

554 Fisher Building.

REFERENCE

Emmerich, Herman L.: Wisconsin Med. Jour., April, 1933.
U. S. P.: 21st Edition, National Formulary.

WHY?

At regular intervals from varied sources comes the inquiry why "something isn't done" about this or that. We are confronted with problems and conditions that are not to a doctor's liking. Their solution is not born of the moment. Many of them will never be solved or adjusted until every doctor relinquishes the argumentative attitude for one of coöperative action and support.

If you render services at a discount or a split of the regular fee; if you serve in a clinic or dispensary where persons able to pay receive free service; if you are filling out insurance certificates for no fee; if you are failing to practice preventive medicine and stand by while parents take their children to health clinics; if you neglect to cultivate and enlighten your senator and representative—if—well if you fail to play an active part in your county society and your community you will find the answer why something isn't being done by looking in your mirror, for the answer is because of YOU. If all the "you's" would rally in support of your County Society satisfactory solutions would be attained. Will "you" get busy? Will "you" go to work? File your answer at your next county meeting.

The appeal is again made to patronize our advertisers. Give them preference for they make your journal possible.

Write for your hotel reservations for the A. M. A. meeting in Cleveland in June.

Send \$1.25 to the State Secretary for a copy of the Survey Committee's report. It contains much of interest and information. Only a few copies remain available.

COURSES FOR GRADUATES

The Department of Post-Graduate Medicine of the University Medical School and the Michigan State Medical Society announce a series of Post-Graduate Courses: *Ophthalmology and Otolaryngology*—University Hospital, Ann Arbor, April 23-28. *Medico-Military Refresher Course*—University Hospital, Ann Arbor, April 15-28. *Diseases of Metabolism*—University Hospital, Ann Arbor, May 21-26. *Clinic on Speech Defects*—Northern Michigan Children's Clinic, Marquette, April 26.

Proctology—Receiving Hospital, Detroit, May 28 to June.

Obstetrics, Gynecology and Gynecological Pathology—Receiving Hospital, Detroit, June 4-9.

Practitioners' Course—Receiving Hospital, Detroit, June 18-23.

Surgical Diagnosis—Receiving Hospital, Detroit, June 25-30.

(All dates inclusive)

UNIVERSITY HOSPITAL OPHTHALMOLOGY AND OTOLARYNGOLOGY

April 23-28, 1934

Ophthalmology

Monday, April 23rd

MORNING

8:00- 9:00 Registration. Room 2040.

9:00-10:00 Angiomatosis Retinae.

DR. F. B. FRALICK

10:00-12:00 Extra-ocular Muscle Balance.

DR. J. W. WHITE

New York City

12:00- 1:30 P.M. Luncheon. Round Table Discussion. Leader

DR. J. W. WHITE

AFTERNOON

2:00- 3:00 Extra-ocular Muscle Balance.

DR. J. W. WHITE

3:00- 4:00 X-ray and Radium Therapy in Ophthalmology.

DR. HAROLD JACOX

4:00- 5:00 Clinical and Pathological Aspects of Malignancy of the Lacrymal Gland.

DR. W. S. DAVIES

EVENING

*7:00- 8:00 Ophthalmic Pathology.

DR. RUTH WANSTROM

DR. F. B. FRALICK

*Ophthalmic Pathology limited to the first ten applicants for the course.

Tuesday, April 24th

MORNING

- 9:00- 10:30 Clinical Pathological Conference.
DR. C. V. WELLER
DR. F. B. FRALICK AND STAFF
- 10:30-12:00 Ocular Therapeutics.
DR. W. R. PARKER
Detroit
- 12:00- 1:30 P.M. Luncheon. Round Table Discussion. Leader
DR. W. R. PARKER

AFTERNOON

- 2:00- 3:00 Ocular Therapeutics.
DR. W. R. PARKER
- 3:00- 4:00 Malignant Uveitis.
DR. H. A. DUNLAP
- 4:00- 5:00 Neurological Problems of Ophthalmological Interest.
DR. R. W. WAGGONER
- *7:00- 8:00 Ophthalmic Pathology.
DR. RUTH WANSTROM
DR. F. B. FRALICK

Wednesday, April 25th

MORNING

- 9:00-10:30 Tattooing of the Leucomatous Cornea.
DR. H. A. DUNLAP
- 10:30-12:00 Problems and Procedures in Refraction.
DR. A. D. PRANGEN
- 12:00- 1:30 P. M. Luncheon. Round Table Discussion. Leader
DR. A. D. PRANGEN

AFTERNOON

- 2:00- 3:00 Problems and Procedures in Refraction.
DR. A. D. PRANGEN
Rochester, Minn.
- 3:00- 4:00 Changes in Refraction Following Operations for Strabismus.
DR. DON MARSHALL

EVENING

- *7:00- 8:00 Ophthalmic Pathology.
DR. RUTH WANSTROM
DR. F. B. FRALICK

Otolaryngology*Thursday, April 26th*

MORNING

- 9:00-10:30 The Complications of Acute Suppurative Otitis Media.
DR. A. C. FURSTENBERG
- 10:30-12:00 Pediatric Otolaryngology.
DR. L. W. DEAN
St. Louis, Mo.
- 12:00- 1:30 P.M. Luncheon.

AFTERNOON

- 2:00- 3:00 Clinical Presentation.
DR. L. W. DEAN
- 3:00- 4:00 Immunity Manifestations of the Fixed Tissues.
DR. R. L. KAHN
- 7:00- Anatomical Studies. Anatomy Laboratory. New Medical Bldg.

Friday, April 27th

MORNING

- 9:00-10:30 The Fractured Nose.
DR. FERRIS N. SMITH
Grand Rapids, Mich.
- 10:30-12:00 The Clinical Application of Newer Research in Chronic Sinusitis.
DR. W. P. WHERRY
Omaha, Neb.
- 12:00- 1:30 P.M. Luncheon.

AFTERNOON

- 2:00- 3:00 Clinical Presentation.
DR. W. P. WHERRY
- 3:00- 4:00 Clinical Presentation of Cases. DR. JAMES MAXWELL

Saturday, April 28th

MORNING

- 9:00-10:30 A Clinical and Pathological Study of Lateral Sinus Thrombosis.
DR. JAMES MILTON ROBB
Detroit, Michigan
- 10:30-12:00 Tumors of the Pharynx and Larynx.
DR. GORDON B. NEW
Rochester, Minn.
- 12:00- 1:30 P.M. Luncheon.

AFTERNOON

- 2:00- 3:00 Diagnostic Problems in Otolaryngology.
DR. GORDON B. NEW
- 3:00- 4:00 Neuroses in Relation to Otolaryngology.
DR. RAYMOND WAGGONER

*Ophthalmic Pathology limited to the first ten applicants for the course.

NORTHERN MICHIGAN CHILDREN'S CLINIC
MARQUETTE

April 26, 1934

Morning

- 9:00 Examination and Demonstration of Cases.
Pediatrics. DR. M. COOPERSTOCK
Marquette
Neurology. DR. R. W. WAGGONER
Ann Arbor
Orthopedics. DR. E. R. ELZINGA
Marquette
Speech Defects.
PROF. JOHN H. MUYSKENS
Ann Arbor

12:00 Luncheon.

AFTERNOON

- 1:00 Neurological Conditions in Childhood. DR. R. W. WAGGONER
1:45 Pediatric Problems.
DR. M. COOPERSTOCK
2:15 Speech Defects and Their Management.
PROF. JOHN H. MUYSKENS
3:00 (a) Water Balance.
(b) Blood Vessel Disease and Treatment.
DR. WALTER MADDOCK
3:45 Orthopedic Program and Policy for the Upper Peninsula.
MR. H. H. HOWETT or
DR. E. R. ELZINGA

MINUTES OF THE SPECIAL MEETING
OF THE EXECUTIVE COMMITTEE
OF THE COUNCIL

The Executive Committee of the Council of the Michigan State Medical Society met in special session in Grand Rapids on February 22, 1934, at 6:00 P. M., for the purpose of considering a request received from the Committee on Economics and for the discussion of such other business as might be deemed advisable.

There were present: Chairman Corbus, Henry Cook, Henry Carstens, C. E. Boys, F. A. Baker and H. A. Luce, Councilor J. F. Powers, President

Geo. L. LeFevre, Ex-President J. B. Jackson, W. H. Marshall, Nathan Sinai and the Secretary.

1. The secretary presented a communication from the Michigan Tuberculosis Association that was addressed to the Council in response to the action of the House of Delegates recommending that the Association employ an Executive Secretary who holds a degree of doctor of medicine. The secretary was directed to transmit this communication to the next meeting of the House of Delegates.

2. The secretary presented a communication from the State Commissioner of Health, Dr. C. C. Slemons, relative to the Child Nursing Project in Michigan. Upon motion, the communication was referred to the chairman of the Committee on Preventive Medicine.

3. The secretary presented a communication from the Council of the Wayne County Medical Society relative to Michigan's proposed institutional building program. After discussion, on motion of Cook and Carstens, the secretary was directed to present the communication to our Committee on Legislation with the recommendation that the Society approves a building program that will provide additional beds for psychiatric cases and that the Society does not approve the providing of additional institutional facilities except as the peculiar and actual needs of any community may deem such facilities desirable.

4. The secretary presented a communication from the secretary of the Calhoun County Medical Society suggesting that the University arrange to provide post graduate opportunities for members of the State Medical Society without fee. On motion of Luce-Cook this communication was referred to the Special Committee on Post Graduate Work of the Committee on Economics for their consideration and recommendation.

5. The secretary presented a communication from the Director of Welfare Relief of Oakland County relative to certain practices that were being carried out in that county. After discussion, on motion of Boys-Carstens, the communication was tabled.

6. Following the request of the Committee on Economics, Doctors Luce and Sinai presented a preliminary report of the findings and factual evidence that was obtained by them in their recent visit to England. This report was a matter of prolonged discussion by all those present. Following the discussion, the following motions were made by Baker and Cook.

(a) That the secretary be instructed to send this report in its entirety, as it was presented to the Executive Committee of the Council at its meeting in Grand Rapids on February 22, 1934, to the chairman of the Board of Trustees of the American Medical Association.

(b) Cook and Baker moved that the report of Doctors Luce and Sinai be received and that the Committee on Medical Economics be instructed to continue with its investigations and studies in compliance with the instructions of the House of Delegates.

REVISED BUDGET—COMMITTEE ON MEDICAL ECONOMICS

September 15, 1933—September 15, 1934							
	Salary	Expense	Travel	Total	Expended to 1-31-34	2-1-34 to 9-15-34	
Director of Studies.....	\$3,000	.....	\$ 200	\$3,200	\$ 180.67	\$3,019.33	
Secretarial and Clerical.....	950	.....	.....	950	353.35	596.65	
Office—Telephone and Telegraph.....	.....	220	.....	220	91.70	128.30	
Printing and postage .....	.....	285	.....	285	135.59	149.41	
Charts and Graphs.....	.....	600	.....	600	438.55	161.45	
Special Studies .....	.....	50	.....	50	.....	50.00	
Health Insurance	500	50	2,000	2,550	2,027.97	522.03	
Postgraduate Studies .....	.....	400	.....	400	.....	400.00	
Miscellaneous .....	.....	250	.....	250	5.84	244.16	
Totals.....	\$4,450	\$1,855	\$2,200	\$8,505	\$3,233.67	\$5,271.33	

7. The Committee on Economics presented a budget to cover the expenses of its activities. This had been referred to the Chairman of the Finance Committee, Dr. Henry Carstens. After discussion, upon motion of Carstens-Baker, the Executive Committee approved the budget of \$7,850.

SOURCES OF FUNDS

Tracy McGregor	\$7,500.00
American College of Dentists.....	350.00

Total.....\$7,850.00

RECEIPTS AND EXPENDITURES JANUARY 31, 1934

Receipts:	
Tracy McGregor	\$3,500.00
American College of Dentists.....	350.00

Total.....\$3,850.00

Expenditures to January 31, 1934—Total.....	\$3,233.67
Balance.....	\$ 616.33

RECAPITULATION

Estimated Budget to September 15, 1934.....	\$8,505.00
Total Receipts to September 15, 1934.....	7,850.00

Deficit.....\$ 655.00

8. Upon motion of Carstens-Boys \$500 of the Society's funds were appropriated, in compliance with the action of the House of Delegates, for the purpose of defraying the expenses of members of the Committee on Economics when attending committee meetings.

9. Upon motion of Baker-Boys the question of the acceptance of the contribution of \$350 from the American College of Dentistry was deferred until the regular meeting of the Executive Committee on March 7.

10. Upon motion of Carstens-Cook, the secretary was directed to pay the expenses and accounts of the Committee on Economics as special funds for the defrayment of these expenses were available.

11. The matter of appointment of members of the Medical Legal Committee as referred by the Council at its January meeting was postponed for consideration at the meeting on March 7.

12. The Executive Committee adjourned at 12:45 A. M.

F. C. WARNSHUIS, *Secretary*.

MINUTES OF THE EXECUTIVE COMMITTEE MEETING OF THE COUNCIL OF THE MICHIGAN STATE MEDICAL SOCIETY

The Executive Committee of the Council convened in session in Ann Arbor on Tuesday, March 6, 1934, at 7:30 P. M. Present: Corbus, Boys, Baker, Luce, Cook, Carstens. There were also present Councilor Cummings, Editor Dempster, Treasurer Hyland, Doctor Bruce and Doctor Sinai.

1. The Council having authorized the Executive Committee to appoint the Medical-Legal Committee the election of members was proceeded with. Upon motion of Luce-Baker, Angus McLean of Detroit was elected chairman. Upon motion of Cook-Luce, F. B. Miner of Flint was elected a member. Upon motion of Carstens-Boys, J. D. Bruce of Ann Arbor was elected a member. Upon motion of Cook-Boys, E. I. Carr of Lansing was elected a member. Upon motion of Luce-Baker, W. J. Stapleton of Detroit was elected secretary. Under a new arrangement the secretary of the committee will act as its administrative officer, assuming the duties formerly assumed by the chairman of the committee.

2. Upon motion of Cook-Baker, the secretary was directed to send a letter of acknowledgment to the officers of the American College of Dentistry for

the \$350.00 contributed to the work of the Committee on Economics.

3. The secretary presented a communication from the Committee on Economics requesting an early and special meeting of the House of Delegates to be called to receive and consider the Progress Report of the Committee on Economics. It was moved by Baker-Boys that a special meeting be called to be held in the auditorium of the Hurley Hospital in Flint. A motion was made by Carstens-Boys that the date be set as of April 12, 1934, at 10:00 A. M.

4. Motion was made by Baker-Boys that the Economics Committee arrange for Regional Conferences, with delegates, for the confidential discussion of the committee's report previously to the holding of the special meeting and that the secretary be instructed to arrange the time and place for the holding of these conferences.

5. Upon motion of Carstens-Luce, the secretary was directed to supply the director of the Committee on Economics with a petty salary account for which itemized statements are to be rendered to the secretary each month and that the other bills incurred in the course of the study and work of the committee be sent to the secretary for audit and voucher.

6. There being no other business the Executive Committee adjourned at 11:45 P. M.

F. C. WARNSHUIS, *Secretary*.

THE CONFERENCE OF COUNTY SECRETARIES

On Wednesday, March 7, 1934, at the University Hospital, Ann Arbor, fifty-two secretaries gathered for their annual conference. Many familiar faces appeared, also quite a few new ones. The plan of the morning clinical session for scientific refreshment made each one feel an interest in being present that otherwise might have been lacking.

The following clinical program was found to be most instructive.

Dr. C. D. Camp, neurologist, discussed epilepsy and hysteria most interestingly, giving the differential points in diagnosis and presenting a case illustrating a combination of symptoms of the two diseases in the same patient.

Dr. Kahn, bacteriologist, discussed some of the recent developments in immunology. He pointed out that the skin and other fixed tissues of the body play an important part in immunology. The response of different living tissues can be measured, and the skin responds most actively of all the tissues. The rôle of the tissues of the immunized animal is based upon the combining power of the tissues with certain antibodies. The skin helps to hold back the spread of the staphylococcus, characterized by the inflammatory response. Most immunity is located in the skin. If bacteria enter the blood stream the blood invasion helps develop immunization. Vaccines injected intravenously in small increasing doses seem to stimulate phagocytosis, while the skin injection only stimulates the skin locally. An interval of ten days between injections gives better response than the more frequent dosage.

Dr. C. C. Sturgis, internist, discussed the medical treatment of the anemias, and presented a case of pernicious anemia. He seemed most pleased with the results when concentrated liver extract is given intravenously, at thirty-day intervals, and urged that the red cell count be raised as high as possible if spinal cord changes are to be benefited.

Dr. Charles Brown, internist, discussed the therapeutic indications and limitations in the treatment of hypertension. He recommended rest, digitalis, theobromin-sodium-salicylate, euphyllin, and, in

dropsy, the mercurials, salyrgan and novasurol. Always give ammonium chloride three or four days before giving mercurials. For headaches in hypertension intrait de gue, extract of mistletoe, is an expensive proprietary remedy sometimes of value. The eye-ground examination is very important in determining evidence of cardio-vascular disease.

Dr. Carl Badgely presented a half dozen or more cases showing different methods of handling fractures as well as a case of leg lengthening where the femur had been elongated by means of open operation and the use of steel plate immobilization.

The afternoon session began promptly at 1:30. Dr. Henry Vaughn, Health Officer of Detroit, presented the so-called Detroit plan for disease prevention, and stressed the fact that only two deaths from diphtheria had occurred in Detroit during the four months of last year, whereas the average in former years was 120 deaths. He outlined also the coöperation plain in rural counties, notably Allegan, Eaton, and Barry counties, now being carried on under the direction of the Kellogg Foundation. He said that the essentials of any public health program were only met when the doctors themselves were properly prepared and thoroughly sold on preventive medicine. Doctors must be taught the newer methods and technic of disease prevention by postgraduate courses. The public must be educated to go to the doctor. Diphtheria can be eradicated, but the public must be educated to the value of immunization. This work can best be carried on by the County Unit System, but the full coöperation of the doctors is essential for its success.

Dr. J. B. Bradley of Eaton Rapids spoke briefly on the legislative problem, and urged each doctor to contact and make friends with each member of the legislature in his own community. It was the opinion that it would be beneath the dignity of the profession to furnish this Committee with money to use in any such manner as was reported that it had been used by certain of the cults last year.

Dr. Lewis LeFevre of Muskegon presented a comprehensive paper on the care of indigents in Muskegon County, which, to some present, seemed to indicate that there was a wide range of latitude in the interpretation of the rules and regulations governing the Federal Emergency Relief Administration. This paper provoked a lot of lively discussion and brought out many points which were bound to be helpful to every County Society represented.

Dr. J. D. Bruce, Dean of Medical Education, discussed the subject of post-graduate education. For many years the University has offered courses in P. G. education in medicine and its branches. Most of these courses were arranged to accommodate the instructors rather than to meet the needs of the doctors. The courses were too long and drawn out and contained too many irrelevant subjects. The trend of late has been to shorten the courses and to intensify the training to include only the immediate subject which the doctor wants. The expense has likewise been reduced to a quarter or an eighth of what it was formerly, and much time and expense saved. About 700 doctors a year take advantage of post-graduate courses at the University, but large as this number is, it should be materially increased, especially for the inclusion of those doctors in rural regions whose opportunities for medical study are limited, and owing to the stringency of the times are unable to afford post-graduate study.

Following these talks a round-table discussion afforded opportunity for each secretary to express opinions and to give experiences in connection with the various phases of social, political or public health policies with which he was familiar.

At a 6 o'clock dinner at the Michigan Union, a

delightful social hour was spent. Short talks on medical problems and policies were given by Past-Presidents H. E. Randall and Carl F. Moll of Flint, J. Milton Robb of Detroit, and by President George LeFevre of Muskegon, as well as impromptu talks by several of the county secretaries. Dr. W. E. Ward, secretary for twenty-six years in Owosso and the longest acting secretary present, presented some of his experiences, and received congratulations for his long time efficient service.

The trend of thought expressed at this meeting was to the effect that there was little fear of State or social medicine providing physicians stick to their last, and fulfill their obligations to the public by the rendering of careful, efficient, scientific medical service to the sick, and to be ready to meet the changing needs of the world in this day of revolutionary thought and action.

SUMMARY

On the whole this Conference of Secretaries, representing the prime movers of organized medicine in Michigan, was well worth attending. These annual meetings do much to put the county secretaries on the spot, and are a school of instruction in the details of his office. The earlier in the year they are held the better they will serve to get the county societies going for the coming year.

If asked how these meetings could be improved upon from now on and speaking from the standpoint of a humble secretary I would recommend the following:

1. Many societies publish a monthly Bulletin. Invite the editors of these Bulletins, if not edited by the secretary, to come to these gatherings. Give these editors a separate hour for conference to discuss their problems, such as advertising rates, cost of printing, editorial matter and other details.
2. Give the secretaries an hour or two to discuss by themselves the problem of secretarial technic, collection of dues, methods of handling of reports, and other problems.
3. Have a general session and have the secretaries bring in any recommendations they may have to the council for improving medical societies and the carrying out of medical objectives in organized medicine.
4. Assign essays before the meeting to specially experienced secretaries on the subjects—How to add new members; how to get good programs across; medical ethics; public health education via radio, etc., etc., and have these papers read for the benefit of all the secretaries. More and more the thought of these intensive sessions will be reflected to the societies in a revival of interest in organized medicine and its power for good in every community will be increasingly felt. There must be no apathy today.

H. B. KNAPP.

OUR ENGLISH MISSION

Many letters have been received seeking to ascertain the findings of Drs. Luce and Sinai during their stay in England.

This English inquiry is part of the activities of our Committee on Economics. This is a Committee of the House of Delegates. None of the committee's findings or recommendations can be disclosed until they have been received and acted upon by the House of Delegates. For this reason no information can be imparted until it is released by the House of Delegates.

Have you paid your 1934 dues? Those in arrears April 15 automatically become listed as suspended.

MICHIGAN STATE MEDICAL SOCIETY AND
DEPARTMENT OF GRADUATE MEDICINE
UNIVERSITY OF MICHIGAN

11th District Post Graduate Conference

Century Club

Muskegon, Michigan

Wednesday, March 21, 1934

- 1:30 P. M. Acute Infections of Throat and Neck.
Dewey R. Heetderks, M.D.
Grand Rapids, Michigan
- 2:15 P. M. Recent Factors in Treatment of Cardiac Lesions.
Charles L. Brown, M.D.
Ann Arbor, Michigan
- 3:00 P. M. Acute Lesions of Abdomen.
Eugene Potter, M.D.
Ann Arbor, Michigan
- 3:45 P. M. Recent Measures in Prevention and Treatment of Acute Infectious Diseases.
T. D. Gordon, M.D.
Grand Rapids, Michigan
- 4:30 P. M. Acute Infections of Urinary Tract.
W. J. Butler, M.D.
Grand Rapids, Michigan
- 6:00 P. M. Century Club—Dinner.

POST GRADUATE CONFERENCE

Perry Hotel—Petoskey

Thursday, March 8, 1934

Councilor B. H. Van Leuvan, presiding

- 2:00 P. M.
1. (a) "Acute Suppurations of the Mouth, Pharynx and Cervical Region"
 - (b) "Tumors and Cysts of the Head and Neck"
A. C. FURSTENBERG, M.D.,
Ann Arbor, Michigan
 2. (a) "The Diagnosis, Symptoms and Treatment of Anemia"
RAPHAEL ISAACS, M.D.,
Ann Arbor, Michigan
 3. (a) "Obstetrical Emergencies"
 - (b) "Post-Natal Care"
NORMAN F. MILLER, M.D.,
Ann Arbor, Michigan

6:00 P. M.

4. Dinner—Perry Hotel

Evening Session

8:00 P. M.—Public Meeting—High School Auditorium

"Preventive Measures for Community Health"

Speakers to be announced.

See Your County Secretary and Keep in Good Standing by paying Your 1934 Dues.

COUNTY SOCIETIES

BAY COUNTY

The following meetings have been held by the society:

January 10—Speaker, Dr. Bruce Douglas, Detroit; subject, "Childhood Tuberculosis."

January 24—A business meeting was held at the Wenonah Hotel at 6:30 o'clock. The meeting was devoted to a discussion of professional and economic problems.

February 14—Dr. W. G. Gamble, Bay City, addressed the society on "Fads, Fancy and Facts of the Thyroid Gland."

February 28—A meeting was again devoted to a discussion of economic and professional problems.

March 14—At 6:30 o'clock at the Wenonah Hotel the meeting was addressed by Dr. Bruce Fralick of Ann Arbor; subject, "A Review of Treatment of Common Eye Conditions."

The society recently passed two important resolutions:

(1) "No member or members of the society shall enter into a contract practice with the City of Bay City. Any work done for city employes must be done at the rates prescribed in the fee bill of the society."

(2) "No member of the society may deliver a talk or thesis before any lay group without first consulting the board of censors."

Councilor P. R. Urmston, Chairman C. S. Tarter of the Preventive Medicine Committee, and Secretary L. F. Foster attended the County Secretaries Conference in Ann Arbor.

The medical society is again to be heard over WBCM every Monday and Thursday at 12:30 P. M.

The following new members were recently elected to society membership: Dr. F. P. Husted, Dr. E. C. Hughes, and Dr. J. N. Asline, all of Bay City.

The society members attended in a body the funeral of Dr. James M. McLean, Saturday, March 3, 1934.

Councilor P. R. Urmston was nominated for the office of County Supervisor from the third ward at the primaries, Monday, March 5. He is now the incumbent.

L. FERNALD FOSTER, M.D., *Secretary.*

BERRIEN COUNTY

Secretary's Annual Report, 1933

This year brings to a close one of the most hectic times that it has been the privilege of any of us to witness. Great world changes in social, economic and legislative affairs, amounting practically to complete revolution, have taken place and have been reflected on the same scale in our Society.

Starting the year with the lowest budget and the lowest dues, in the history of our Society, we have come through with flying colors, no loss of members, but an increase, viz., some have dropped out but have been replaced by others, and in addition we have paid all our bills, some back ones, and some that were unexpected when the budget was outlined, and we still have money in the treasury for the new year.

There have been criticisms aimed at the financial, social and legislative actions of our Society, as well as the usual ones always to be expected aimed at the officers. But criticism of actions, lack of actions and too much action, signify an interest in any organization, and that it is worth while, as without

such comment the Society is either too good to be true or else not worth existing.

In an organization such as ours, there is a great tendency to allow all the work to drop on the shoulders of one or two, because of meeting once a month, covering a wide geographical area and the variation in city, country and village practice, so that these few on whom the responsibility hinges are also the ones on whom the criticism is heaped. I know of no way by which this can be avoided. We have tried repeatedly to shift program responsibility without success. This year the Public Relations Committee have more than done their part. They have displayed an interest, and work, and time, that shows the value of organized medicine, and their work has been well done. Our well attended business meetings have shown that there are many sides to all questions, and final consideration has been for the group as a whole.

Social problems such as the Adult Afflicted, Child Afflicted, Public Health and Welfare, have undergone such complete revolutions not only in our county, but all over the United States, that it has been impossible for any one or two individuals or groups to say which policy is the right one. The same has been true of legislative events, coming so fast and with such revolutionary suddenness that, almost before one could think, legislation has been enacted, the like of which the world has never known before, and such legislation has not been confined but all-inclusive, even of medical acts, and, as a natural sequence of this, individuals want to know why and how such drastic and experimental changes, and the reply is, "Damned if I know, but it did happen," and personally I have seen enough to know that the efforts of individuals, or groups, have been puny in their attempt to stem the tide. I suppose that it is all part of the New Deal, and a continuation of placing the blame on the "Ins."

However, we have this thing about medicine to offer, and it is part of our Code which has stood the test of time, and it is, "When new therapeutics is offered, if it stands the test of repeated and mass use, then turn to it," but in the meantime hold fast to the methods that have stood the test of time. If a new disease appears, treat it systematically until it can be diagnosed, in other words, let us not be hasty in applying a cure until we know what the disease we are fighting. We can see no difference in the approach to social problems of medicine, as they concern us, than we do in the approach to scientific problems.

The practice of medicine is not like retailing a commercial or fixed commodity of set standard, but it is the marketing of an immaterial wealth of service, which in one instance is valueless, and in another invaluable.

In legislative actions we have had the invasion of cults, the lack of protection of the public from quackery, the jeopardy of physicians' rights from legislative bills aimed at the profession, such as health insurance laws, compensation laws, drug laws, income tax laws and a thousand and one other items. But the history of our profession has always shown these and we have before survived the invasion of cults and adverse legislation. Should our present policy be, "I am not my brother's keeper," "Let the public look out for itself," "Raise huge sums for medical lobbies," "Fighting fire with fire," or should we follow a conservative course of study, applying what therapeutic means we have and know, interspersed with a prayer and a hope that all of us united will find a diagnosis and cure. Let us not be stampeded into action and let us guard against a "Furor operandi."

It is easy to say afterwards, "He should have done this, or he should have done that for us as our

representative," and the only comeback your representative has in this Society, the State and the National is, "I met the issue with the best I had, I played the game square, not only for you but for myself." Our profession has an all too common example of this in the individual who takes the credit when the patient is about well, and accuses the other fellow of malpractice if the patient dies.

Let us take the economical functions of organized medicine, and I am using the expression organized medicine not only to include our little society, but also our affiliations. This subject, of course, has more ramifications than any other, such as physicians' fees and expenses, and public relations in regard to fees for the indigent, child afflicted, and public health. Never before in the history of the world have there been such changes as have appeared in the economic status of medicine as have occurred in the past three years. To cut fees or not to cut, to continue charity to the indigent or to establish charges, to ask for state medicine, public health insurance, or what. I defy any group to be unanimous in the treatment of such problems. All these, and more too, confront us in the future, and they cannot be intelligently discussed or settled without study and diagnosis. Your state and national societies are doing a vast amount of research on these problems, and the tendency at your state meeting in Grand Rapids was to have a number of solutions and to avoid hasty actions which will later be regretted. Perhaps most of these problems are "Bugaboos," and perhaps delayed action means the death of the patient, but we would personally rather be condemned as being too conservative rather than being classified as hasty, rattlebrained, and a tyro. It's a little easier on one's conscience to know that the patient died a natural death rather than from too much interference, and it is a lot easier to save the next case, and incidentally the bulk of the public, while they "kid" us in regard to our conservative ethics, will stick to the conservative physicians, and I maintain that in every community the leaders through a period of time are men of this classification.

Financially organized medicine has the lowest cost of any group or guild in the world. Those of you who know about trade associations or luncheon clubs will know that this is true. Aside from your meal, your medical society costs about \$1.04 per month. Of this 37½c per month is local expense paid out in bulletins, postage, stationery, guest expense, and miscellaneous secretary expense such as correspondence, etc., which is summarized and itemized for you in the treasurer's report. In other words leave out everything else connected with organized medicine but the speaker at a monthly meeting, and you pay less to hear him than you do a good amusement such as a movie. Of course speakers are like movies, occasionally we feel that the time would have been spent more profitably at home reading, but again one must consider that in the past five years we have had before this Society nearly every prominent physician and specialist in the State of Michigan, and to avoid duplication and imposition it is not surprising that occasionally we have a talk that is not worth while.

The remaining 67.5 cents of your monthly dues goes to your State Society. For this you receive the JOURNAL once a month, the expense of which amounts to 50 cents per number. In other words, 50 cents a month for scientific reading and a trade journal which tells you of the latest advances in science and the social, economic and legislative problems of the physicians of the State of Michigan. The remaining 17.5 cents a month of your state dues pays for medico-legal advice and aid, legislative problems and propaganda, post-graduate lectures, economic studies, annual meetings, administrative

expense and all the hundred and one things in the state program. Many of these items probably do not affect you as an individual, but it is part of your contribution to the guild, and what is good for the majority is good for the individual. The question of medico-legal aid and advice has often been criticised as unnecessary expense, but if one considers the effect on your insurance premium alone it is worth while. Cities that do not have any fire protection pay high insurance premiums. No one but the crook wants to collect indemnity on fire insurance, as all honest men would much prefer to have the fire department get there in time to stop a conflagration. Adequate protection is wanted by the majority and for this you pay about 7 cents per month to the state. Also there has been criticism aimed at the total of such expense, stating that it smacks of racketeering. If there are any of us who upon careful study of the problem and statistical analysis can show how this can be cut down and still provide as much as we are getting let them come forward with new plans before the old ones are discarded, and I am sure that the Council of the State Society will bless you and give thanks.

So in this summary of our year's work, I beg of you, do not divorce your medical economics, legislation and finances from a profession or guild that has stood the test of time and previous depressions. Do not confuse with other commercial and retail lines. Take from these what is good and what can safely be applied to medicine, because of changing times, but do so in the manner in which we have been taught and the ways with which we are familiar in the practice of medicine. Give changes the therapeutic test before applications, and above all beware of the therapeutic-enthusiast, whose empiricism is based on one or two cases. If we do this the profession will survive with flying colors, knowledge and fellowship will increase; with these, as in the past, individual remuneration and pleasure.

Your secretary takes this opportunity to thank the membership for the confidence and coöperation of the society as a whole during the past year and to assure you that it has been a great pleasure to be of service to you. Perhaps at times the committees, such as the Public Relations, have felt that I have been a pest, but because of my close relation and association with the individuals of the society, I have tried to bring up all the points that the individuals might consider, at all times, even if personally I felt different about it, believing that action should be based on a thorough analysis of all objections. I wish to repeat that any organization that runs too smooth is either not worth keeping or is too good to be true.

W. C. ELLET, *Secretary.*

EATON COUNTY

A special meeting of the Eaton County Medical Society was called January 3, 1934, at the Hayes-Green Memorial Hospital to discuss with the local administration the part of the physician in the Direct Relief of the F.E.R.A.

An auditing committee consisting of Dr. C. D. Huber, Dr. A. G. Stanka, and Dr. Phil Quick was appointed by the president to meet with the local administration once monthly to audit all medical bills under the relief for the past month.

The committee is working harmoniously with the local administrator, Mr. H. Marr Byington, who is a friend of the profession.

Ladies' night was held at the Carnes-Tavern Hotel, Charlotte, January 26, 1934. Following dinner, the president, Dr. Clyde McLaughlin, called to order a short business meeting. At this meeting it was moved, seconded and unanimously carried that

the Michigan Tuberculosis Association through the services of local physicians give tuberculin tests to all of the students of the upper five grades of the public schools of the county.

The speaker of the evening, Royal G. Hall, chairman of the Social Science Division of Albion College, was introduced by the president. Dr. Hall is a student on international affairs and spent the year 1932 visiting sixteen countries of Europe. His subject was "Germany Under Hitler." Following a very interesting presentation, a discussion was held in which Dr. Hall answered many questions.

JOHN LAWTHOR, M.D., *Secretary-Treasurer.*

GRATIOT-ISABELLA-CLARE COUNTY

The regular monthly Tri-County Medical Meeting was held at the Wright Hotel, Alma, on February 16, 1934, with the president, Dr. A. D. Hobbs, presiding. The usual dinner was served before the program. Nineteen members were present.

Dr. Henry F. Vaughan, Commissioner of Health, Detroit, and member of board, W. K. Kellogg Foundation, then gave a very interesting discussion of the work he has developed in Detroit in Preventive Medicine and explained the benefits to the public and to the doctor through "Professional Participation in Public Health Work." Slides were shown to illustrate and outline more forcefully his talk. He then turned the discussion over to Dr. Byington, Associate Medical Director, W. K. Kellogg Foundation, who by the aid of slides discussed "Medical Participation in Rural Communities."

The subject was then open for discussion by Dr. Hobbs, who called upon Drs. DuBois, Carney, and Barstow.

Dr. Hobbs, in well chosen words, thanked Drs. Vaughan and Byington for bringing this aspect of the subject to the Society.

The regular business meeting then followed. Minutes of last regular meeting were read and approved.

Report of Committee on Membership.—Dr. Carney, chairman, moved that application for membership by Dr. L. L. Davis, Mt. Pleasant, be laid on the table. Seconded and carried.

Report Committee on Economics.—Dr. Carney, chairman, reported the Emergency Welfare fee adjustment. All minor surgical or special treatment to be allowed extra charge, but all bills are subject to question by the Welfare Committee and doctors' records must be available for scrutiny and adjustment by the Welfare Board and Society Committee on Economics.

It was moved and seconded that report of Tri-County Medical meetings be reported and have published by the secretary in the Mt. Pleasant, St. Louis, and Ithaca papers. Carried.

R. A. WILCOX, M.D., *Secretary pro tem.*

HILLSDALE COUNTY

A special meeting of the Hillsdale County Medical Society was held at the Keefer House, Hillsdale, Michigan, at 7:00 p. m., February 12, 1934, following a dinner.

Dr. H. F. Mattson, president of the Society, called the meeting to order.

Dr. Mattson introduced Miss West of the Michigan Department of Public Health, who spoke on the Relationship between the Public Health Service and the County Medical Society. She outlined a sixty-day plan for the immunization of school children up to the age of twelve years.

Moved by Dr. Day and seconded by Dr. Green that the doctors of the Hillsdale County Medical

Society cooperate with the Michigan Department of Public Health by immunizing without charge all children certified as coming from families of the indigent; and that the doctors schedule their usual fees for those able to pay fully or in part for this service. Carried.

Mr. Pinto of the W. K. Kellogg Foundation spoke on the subject of the work of the Kellogg Foundation and its relationship in health work to the County Medical Society.

It was moved by Dr. Green and seconded by Dr. Bower that a committee be appointed to secure necessary petitions, petitioning the Kellogg Foundation to establish a County Health Unit in Hillsdale County. Carried.

Moved by Dr. Green and seconded by Dr. Day that the Society go on record as thanking Miss West for her help in her splendid address. Carried.

Miss Ruth Knapp, City Nurse, spoke of the health work in the City of Hillsdale and was thanked by the Chair.

Moved by Dr. Martindale, seconded by Dr. Poppen, that the meeting be adjourned.

D. W. FENTON, *Secretary*.

KALAMAZOO

The regular monthly meeting of the Kalamazoo Academy of Medicine was held in the Academy rooms February 20, 1934, following the dinner; President Huyser in the chair.

The minutes of the previous meeting were read and approved.

Communications were read.

Dr. Collins reported for the Medical Relations Committee. It was moved by Dr. Hubbell, seconded by Dr. Stewart, that the report be accepted and a more detailed report of the plans submitted at a subsequent meeting. Discussed by Drs. Hubbell, Vaughan and Collins. Motion carried.

Dr. Collins reported for the Committee appointed to confer with the Board of Supervisors of Kalamazoo County relative to the payment for rabies vaccine given by various physicians. The committee recommended: (1) That new statements be mailed to the County Clerk accompanied by an affidavit setting forth the circumstances under which the antitoxin was given and affirming that the administration of the antitoxin was approved by the Health Commissioner of the jurisdiction in which the patient resided. If such approval was not obtained it is suggested that the Health Commissioner be requested to approve the bill. Dr. Lavan has kindly consented to receive such bills for the city of Kalamazoo, attach his approval, and forward the bills to the County Clerk. (2) That the Secretary of the Academy be requested to write the County Clerk asking that the accounts be reconsidered by the Board of Supervisors and that each account be given individual attention. It was moved by Dr. Den Bleyker and seconded by Dr. Gerstner that the report be accepted. Discussed by Dr. F. T. Andrews. Motion carried.

The second reading of applications for membership of Dr. R. A. MacNeill of Allegan and Dr. A. B. Hodgman of Kalamazoo resulted in their unanimous acceptance.

The application of Dr. C. C. Fenstermacher, Three Rivers, for associate membership was unanimously accepted.

President Huyser announced the appointment of the following committees: (1) Dr. Collins and Dr. Westcott to be added to the Kalamazoo County Medical Advisory Committee; (2) Drs. A. S. Youngs, P. G. Schrier, and D. J. Scholton to draw up a set of resolutions pertaining to the death of Dr. Bosman and send a copy of such to his family;

(3) Drs. H. H. Stryker, W. O. Jennings, and R. W. Shook to draw up a set of resolutions pertaining to the death of Dr. Rogers and send a copy to his family.

LIVINGSTON COUNTY

Following a Sanatorium dinner at 7:00 P. M., Dr. Clyde K. Hasley, President of the Detroit Radiological Society, was introduced and gave us a very illuminating discourse on "seborrheic dermatitis and the treatment of superficial malignancies."

Doctor Hasley's talk was illustrated with an excellent series of stereoscopic slides. In discussing treatment he stressed the importance of radiological methods, particularly in the early dermo malignancies.

A short, informal business meeting followed the medical phase of the evening. There were present twelve members and five guests, including representatives of the Livingston County Dental Association.

R. S. ANDERSON, *Secretary*.

MECOSTA COUNTY

I have the honor to submit herewith the minutes of the last regular meeting of the Mecosta-Osceola Medical Society held at the Western Hotel, Big Rapids, Tuesday evening, February 13, 1934, the guests of Drs. MacIntyre and Peck.

Present: Drs. MacIntyre, Peck, Soper, Treynor, Campbell, Grieve, Franklin, Yeo, Bruggema, Kelsey, Burkart, Chess, East and Kilmer; Dentists Pryor, Zetterstedt, Shepherd, Miller and Rogers; Guests, Dr. Miller of Ft. Sheridan, C. C. Camp, Peacock; Dr. Epstein, Ft. Sheridan, C. C. Camp, Baldwin; Dr. A. R. Woodburne of the Grand Rapids Clinic; Mr. C. E. Moore, of Grand Rapids; and Dr. Hayes of Reed City.

Minutes of the last meeting were read and approved. Communications from the secretary of the State Medical Society were read and placed on file. Communication from Miss Addy, School Nurse, and Miss Bergy, County Nurse, relative to making TB tests of all school children under auspices of State TB Association; work other than x-ray to be done by the physicians of the county free of charge. Dr. Treynor explained the proposed plan and suggested that examination of the High School students might be advisable. Discussion brought out the general opinion that some reasonable arguments in favor of doing it should be presented by the sponsors of the plan. Dr. Treynor was requested to get some definite proposal in writing from the nurses named above and submit it to the society at the next meeting.

Application of Dr. Hayes, dentist of Reed City, was presented and on motion of Dr. Miller supported by Dr. Rogers, vote was taken and Dr. Hayes was elected to membership.

Dr. Treynor explained method of dealing with CWA employes who are not able financially to pay for services. Authorization for medical attention must be renewed every week. Emergency injuries acquired in line of duty are cared for by Federal Government, and come under compensation regulations.

Meeting then turned over to Dr. Chess, Chairman of Program Committee, who introduced Dr. A. R. Woodburne of the Grand Rapids Clinic, who gave a very interesting lantern slide presentation on cutaneous manifestations of syphilis. Discussion was freely indulged in and many questions asked. Chairman then introduced Mr. C. E. Moore of Grand Rapids

who showed views of the Canadian Northwest—Hunting Big Game in the Northwest woods.

Motion made to give guests and hosts a rising vote of thanks. Meeting adjourned.

Following are the minutes of a regular meeting of the Mecosta-Osceola Medical Society held in the western Hotel, Big Rapids, Tuesday, March 13, at 6:30 p. m., as the guests of Drs. Treynor and Bruggema.

Present: Drs. Chess, Peck, Treynor, Grieve, MacIntyre, Kilmer, Campbell, Bunce, Bruggema, Yeo and Burkart; dentists—Drs. Pryor, Rogers, Zetterstedt, Hayes and Miller; guest, Mr. Edward Brink of Grand Rapids, Michigan.

Minutes of last meeting were read and approved as read. Communication from secretary of State Medical Society relative to special meeting of the House of Delegates to be held at the Hurley Hospital, Flint, Michigan, on April 12, was read. Dr. Gordon H. Yeo was instructed to represent the society at this meeting.

The meeting was then turned over to the chairman of the Program Committee, Dr. L. F. Chess, who introduced Mr. Edward Brink. Mr. Brink gave a very instructive talk on the subject "Legal Responsibilities in Medical Practice." Following the speaker, discussion of the subject was freely indulged in by all. Upon motion of Dr. Yeo and Dr. Kilmer, a rising vote of thanks was tendered the speaker and hosts.

There being no further business, the meeting was adjourned.

JNO. L. BURKART, *Secretary*.

NORTHERN MICHIGAN

The regular meeting of the Northern Michigan Medical Society was held at the Perry Hotel, Petosky, February 8, 1934. The meeting was called to order by President McMillan. The secretary's report was read and approved. Correspondence was read. Drs. Conway, Armstrong, and Monfort were appointed as a Legislative Committee. Dr. Burns was appointed to the Program Committee for March and plans were formulated for a post graduate conference for our next meeting. Details were left to the committee to be worked out.

The business meeting was then closed and the program turned over to the Program Committee. Dr. Mast introduced the speaker of the evening, Dr. Arthur Woodburne, Grand Rapids. Dr. Woodburne gave a very practical illustrated talk, on the diagnosis of the various skin manifestations of lues. He clearly brought out the main diagnostic points connected with these manifestations. He also touched briefly on the treatment of syphilis. The talk was well received and was of practical value to the general practitioner.

E. J. BRENNER, *Secretary*,

The regular meeting of the Northern Michigan Medical Society was held in the form of a post-graduate conference at the Perry Hotel, Petoskey, March 8, 1934. One of the largest turnouts in years responded and the most successful of meetings was held. Visiting doctors from Alpena, Atlanta, Cadillac, Kalkaska, Beulah, Traverse City, Lake City, Gaylord, Grayling and other Northern Michigan cities attended.

The meeting was presided over by Councilor Van Leuven. The guest speakers were Dr. A. C. Furstenberg, Ann Arbor, who spoke on "Acute Suppurations of the Mouth, Pharynx, and Cervical Regions; Dr. Raphael Isaacs, Ann Arbor, who spoke on "The Diagnosis, Symptoms and Treatment of Anemia" and Dr. Norman Kretschmar, Ann Arbor, who spoke on "Obstetrical Emergencies." Each of these talks was very well given and enjoyed to the fullest extent by all those present.

Following the talks a dinner was served by the hotel.

SAINT CLAIR COUNTY

A regular meeting of the Saint Clair County Medical Society was held at the Hotel Harrington, Port Huron, Michigan, Tuesday, February 20, 1934. The meeting was very largely attended, there being twenty-five present at supper and thirty-five during the reading of the paper presented by Dr. W. D. Barrett of Detroit. The minutes of the preceding meeting were read and approved without correction.

The president, Dr. A. B. Armsbury, called the attention of the members and guests to the complimentary dinner being tendered Dr. Charles Godwin Jennings at Detroit on February 28, 1934, and urged that as many arrange to attend as possible. The president then called upon Dr. T. E. DeGurse of Marine City to introduce the guest of the evening: Dr. Wyman D. Barrett of Detroit. The former did so, paying several compliments in regard to the professional attainments of his friend Doctor Barrett.

The subject presented by Doctor Barrett was "Ruptured Appendix." The speaker stressed the fact that mortality in this class of condition had been on the increase and that this increase was due, in his opinion, not to neglect on the part of our profession as much as to the fact that owing to the economic situation the public generally were neglectful of themselves. He stated that many cases were being admitted to Detroit hospitals in which not only was the appendix ruptured but often ruptured for days prior to treatment. The speaker brought up the question of delayed treatment after rupture and stated that the trend was now to return to the view held more popularly years ago: namely to wait for a period after rupture unless intervention could be done within the first twenty-four hours. He separated the differential diagnosis of the child and the adult case and covered the same in a very complete manner. The speaker then read five case records to bring out the point that the waiting treatment in certain cases was followed by satisfactory end-result. During the interval after rupture and before drainage of abscesses he outlined the use of the rectal and Lavigne tubes to lessen distension, rectal feeding, parenteral fluids both saline and glucose and mentioned enterostomy as a measure to save life and cautioned that it was not to be delayed. He paid a compliment to our friend Dr. Angus McLean when he stated that many years ago the latter had done what he considered the very first enterostomies in the United States. Discussion was opened in a very fine manner by Dr. A. J. McKenzie and carried on by Dr. J. C. Webster of Marlette, J. A. Attridge and D. W. Patterson of Port Huron and C. A. MacPherson of Saint Clair. Doctor Barrett then closed the subject in the usual manner, replying to several questions raised anent the subject. The president thanked our guest for his fine talk and the Society gave him a rising vote of thanks. Dr. P. V. Wagley of Pontiac was announced as our next speaker at the meeting of March 6.

Meeting adjourned at 9:35 p. m.

A regular meeting of Saint Clair County Medical Society was held at the Harrington Hotel, Port Huron, Michigan, Tuesday March 6, 1934, Supper was served to twenty at 6:30 p. m. The meeting was called to order by President Armsbury at 7:15 p. m. Dr. Howard O. Brush acted as secretary pro tem. until the Secretary arrived and took over his duties. The attendance at the meeting was four guests and twenty-two members. Dr. C. H. Ainsworth of Saint Clair was reinstated as a member in good standing by a resolution acted upon in the affirmative upon the receipt of his dues for current year. Discussion with regard to fees allowed by the Kroger Grocer & Baking Company followed. It was moved and supported that the members of the Society do not make any physical examinations for this firm for less than \$2.00 and that the secretary be directed to write the company informing them of this action. Carried. It was moved, supported and carried that the secretary write the superintendents of Port Huron and St. Clair Community Hospitals submitting a list of members in good standing in the county, State and American Medical Associations.

Dr. P. V. Wagley, Assistant Medical Superintendent of Pontiac State Hospital, gave a very interesting talk on, "The relation of the physician to the psychiatrist." Several points were stressed by the speaker: that many so-called functional conditions of the body frequently placed under treatment by the physician are in reality psychoneuroses, that such cases are not well treated by the use of medicines, that the physician should endeavor to gain the confidence of the patient and then use psychotherapy, that once a fixation takes place the patient then becomes an institutional patient, that the means at the disposal of the institutional psychiatrist are essentially different from those in the hand of the physician, that a greater degree of control is possible in a hospital and that at times good results are obtained by seemingly harsh and stern treatment. Doctor Wagley also commented upon the widespread use of phenobarbital and stated that it was a habit forming drug and that many cases were admitted to the State Hospital who were addicts. In reply to a question the speaker stressed the fact that in probate examinations the physician should not attempt to make an exact diagnosis of a neuro-psychiatric condition but should confine his statement to a recital of facts and symptoms and allow the Probate Judge to draw his own conclusion. Discussion of the subject was carried on by Drs. Heavenrich, N. J. McColl and R. M. Burke of Emmett. Before adjournment the president thanked the speaker for his interesting talk and the Society gave him a rising vote of thanks. The application of Dr. Henry C. Wass of Saint Clair for membership in the Society was received and referred to the Board of Censors for action. Meeting adjourned at 9:15 p. m.

GEORGE M. KESL, *Secretary-Treasurer.*

TUSCOLA COUNTY

The regular meeting of the Tuscola County Medical Society was held at the Montague Hotel, Caro, on March 8, 1934.

The meeting was conducted by Dr. O. G. Johnson, President, and papers were given by Drs. Ed Dowdle, and Wm. P. Woodworth.

Dr. Dowdle talked on "Acute Abdominal Conditions," and Dr. Woodworth on "Ophthalmology."

Dinner was served after the meeting.

L. L. SAVAGE, M.D., *Secretary.*

WOMAN'S AUXILIARY, MICHIGAN STATE MEDICAL SOCIETY

MRS. ELMER L. WHITNEY, President
18224 Wildemere Ave., Detroit

MRS. C. L. STRAITH, Secretary-Treasurer
19305 Berkley Road, Detroit

BAY COUNTY: On February 7, Dr. and Mrs. L. Fernald Foster entertained members of the Bay County Medical Society and Auxiliary at their home, 1803 McKinley Ave., Bay City, between 6 and 8 p. m., at a supper party. Assisting the hostess were Mrs. V. H. Dumond, Mrs. D. J. Mosier, Mrs. E. C. Miller, Mrs. C. L. Hess, Mrs. G. M. Brown and Miss Marion Moore.

MRS. E. C. MILLER, *Publicity Chairman.*

OAKLAND COUNTY: At the luncheon meeting of the Oakland County Medical Auxiliary, on February 16, at St. Joseph Mercy Hospital, Dr. Howard Barber spoke on "The Trend of Medical Economics." Twenty members were present.

During the business meeting, which followed, Mrs. Hubert M. Heitsch, who was elected by the executive committee to fill the unexpired term of Mrs. J. Eugene Church, as president, was in charge.

MRS. R. H. BAKER, *Publicity Chairman.*

TUSCOLA COUNTY: Mrs. Theo. Hauffman, of Vassar, was hostess to the wives of the Tuscola County Medical Society members at a delightful tea, at her home, on February 8, which preceded the dinner given by the Tuscola County Medical Society at the Vassar Hotel to which they were invited.

WAYNE COUNTY: The public relations meeting of the Woman's Auxiliary to the Wayne County Medical Society held on February 13, with Dr. David R. Clark as speaker, drew a large audience to the J. L. Hudson Co. auditorium, where it was held.

Mrs. Frances Harris Dohn, soprano soloist and radio artist with station WWJ, rendered a group of French songs. She was accompanied on the piano by Miss Jean Apel. Mrs. Claire Kyler Hagey, in colonial costume, presented two readings.

Dr. Clark, Professor of Psychiatry at the Detroit College of Medicine and Surgery, senior attending psychiatrist to Receiving Hospital and St. Joseph's Retreat, and consultant to many other Detroit hospitals, spoke on "The Content of a Psychopathic Ward"; a very timely subject because of the great prevalence of mental disturbances at present. He was introduced by Mrs. Frank W. Hartman, vice-president and program chairman of the Auxiliary.

Dr. Clark said that in speaking to this audience he felt like an employee reporting to his employer, for the taxpayers of Detroit are the owners of Receiving Hospital. He said that there are two reasons that we provide for the mentally deficient: because we are "our brother's keeper," and for our own protection. On this particular morning there were over 280 patients in the psychopathic ward at Receiving Hospital, and on busy days there have been nearly 500.

He stressed liquor as one of the chief stepping-stones leading to mental derangement, though the direct cause is usually physical illness or inadequacy, an inferiority complex, or some other mental pressure. The cells of the body form a protective substance in themselves against the irritation of alcohol. But, if a large amount of alcohol is consumed for a length of time, it gradually destroys the cells. Thus, if a man drinks consistently for a period of,

say five years, and then reforms, this physical destruction is often not visible. But, if the same man, sometime later, has a severe body injury he is very likely to develop delirium tremens. Because of this the hospitals administer a preventive whenever an accident victim is admitted who is known to have been addicted to intoxicants at any time.

During the general discussion which followed Dr. Clark's speech, the large number of questions asked indicated the great interest his talk had aroused.

The Monday night lectures on the "History of Medicine," sponsored by the Study Group of the Auxiliary, have continued to attract a great many doctors' wives and to receive much acclaim for their instructive value. On February 12th, Dr. Wm. J. Stapleton, Jr., took up "Roman Medicine"; on February 19th, Dr. L. M. Sa'di spoke on "The Legacy of Arabian Medicine," that period from the sixth to the thirteenth century; and on February 26th, Dr. Harry W. Plaggemeyer covered the last period in the course, that of the Italians, preceding and including the time of Harvey.

On Tuesday, February 6, Mrs. H. W. Plaggemeyer, corresponding secretary, entertained members of the Board of the Woman's Auxiliary at a buffet luncheon preceding the regular monthly Board meeting at her home.

Reports are that the many bridge clubs organized to promote acquaintance among doctors' wives living in the same neighborhood and for the benefit of the piano fund are proving very enjoyable. Also, that the members of the Wednesday afternoon public speaking class are reaping much knowledge as well as pleasure from their course. This enterprise is also for the benefit of the piano fund.

During the month, two groups of Auxiliary members accepted the invitation of Borden's Farm Products Co., of Michigan, to visit and have luncheon at their plant. The program included a special showing of the process of fortifying pasteurized milk with Vitamin D by direct irradiation, and an address by Mr. Will A. Foster, Vice President of the company, on "Practical Problems of Nutrition."

MRS. CLIFFORD LORANGER, *Publicity Chairman.*

EVAPORATED MILK

The many advantages in infant feeding of a high quality evaporated milk, such as Borden's, have been described in numerous reports of extensive clinical investigations. During the period from 1929 to 1932, inclusive, no less than forty-three papers on the properties and uses of evaporated milk appeared in the scientific literature, while in 1933 there were 21 additional papers on this subject in medical and technical magazines.

The most recent report on the successful clinical use of evaporated milk is that of Quillian in the *Journal of the Florida Medical Association* for January, 1934. As a result of this experience with 173 infants on evaporated milk compared with 167 on other formulas, this writer states that, "The chief advantages of the use of evaporated milk are ease of preparation, ready digestibility, economy, and safety," and he also concludes that, "..... properly modified, evaporated milk may be considered a satisfactory food for infants."

Borden's Evaporated Milk, which was accepted by the Committee on Foods of the American Medical Association in 1930, has been found satisfactory by innumerable physicians, who make it an invariable practice to specify Borden's by name when prescribing a standard evaporated milk for infant feeding.

OBITUARY

DR. MAX BALLIN

Dr. Max Ballin, of Detroit, died at his home on Longfellow Avenue, March third, as a result of heart disease. He had been ill about six weeks. Dr. Ballin was born at Nordhausen, Germany, August 13, 1869. He studied medicine at the Universities of Freiberg, Munich and Berlin. He was graduated from the University of Berlin in 1892 and came to the United States in 1896, where he began practice at Leadville, Colorado. On invitation of Dr. Donald McLean, the leading surgeon of this state during the nineties, Dr. Ballin came to Detroit, where he practiced his profession up to his last illness. He was head of the department of surgery of Harper Hospital from 1916 to the time of his death, as well as consulting surgeon to the Woman's Hospital, St. Mary's, the Highland Park General Hospital and the Children's Hospital of Michigan. In 1921 he was a member of the Detroit Welfare Commission. During the World War, Dr. Ballin was chief of the surgical service at Base Hospital, Camp Grant. His society memberships included the Wayne County, Michigan State and American Medical Associations, the Detroit Academy of Medicine, and the Detroit Academy of Surgery, the Detroit Board of Commerce and the Harmonie Society, the Army and Navy Club, the Phoenix Club and the Redford Country Club. Dr. Ballin held a unique position among the members of the medical profession as a research student. His ability as a surgical pathologist was respected to the point of veneration. Among his published work may be mentioned a monograph on Surgical Treatment of Exophthalmic Goiter, Bier's Hyperæmic Treatment, Malignant Leiomyoma, Routine Examinations, Progressive Post-operative gangrene of the Skin. In 1932 he was awarded two gold medals for scientific research by the American Medical Association and in 1933 he was awarded the bronze medal of the American Roentgen Ray Society. Dr. Ballin is survived by his wife, Carrie L., and four brothers. The funeral services were held on Wednesday, March the seventh, after which cremation took place.

Justice Henry M. Butzel, of the Michigan Supreme Court, and five of Dr. Max Ballin's medical associates—Drs. Robert C. Moehlig, Norman Allen, Maurice Meyers, Plinn F. Morse and Emil Amberg served as pallbearers.

Dr. Leo M. Franklin, of Temple Beth El, officiated. The rites were attended by more than 700 persons, including leading medical, professional and business men.

A violin solo was given by William Graefing King, of the first violin section of the Detroit Symphony Orchestra.

Common sense and wordly experience tell us that if we would overthrow an enemy we must understand all his resources; if we would overcome a difficulty, we must understand where the difficulty resists our attempts; if we would solve a problem, the nature of the problem must be understood. The principle underlying these statements should be applied in the prevention and cure of disease.

SIR JAMES MACKENZIE.

GENERAL NEWS AND ANNOUNCEMENTS

Dr. J. C. Foshee, Grand Rapids, spent two weeks in the clinics in New Orleans.

President G. L. Le Fevre spent ten days in Palm Beach, where he was called in consultation.

Dr. Ferris N. Smith, Grand Rapids, was confined to a hospital for two weeks by reason of a severe erysipelas infection.

Members are again advised to make their Cleaveland hotel reservations for the A. M. A. meeting June 11-15.

Dr. Samuel Altshular and Miss Constance Weinberger of Detroit were married on Sunday, the fourth of March, 1934.

The regular meeting of the Detroit Roentgen Ray and Radium Society was held March 8 when the following guest speakers from Cleveland presented the program: Dr Otto Glasser, "Roentgen's Ideals as Reflected in his Letters"; Dr. B. H. Nichols, "Some Tumors of the Head Considered Roentgenographically"; Dr. U. V. Portmann, "Roentgen Therapy for Mediastinal Glandular Tuberculosis."

Dr. Hugo A. Freund, Dr. Henry A. Luce and Mr. James Watkins of Detroit were appointed by the Mayor of Detroit as an investigating committee to report on the conditions prevailing in the Receiving Hospital. This committee made a study of the economic and medical situation and reported among other things to the effect that the economic management should be by a Lay Business Manager whose duty it would be to keep a strict account of cost of maintenance and that the medical superintendent should be free to supervise the medical and surgical service.

The Annual Clinics and Banquet of the Alumni Association of the Detroit College of Medicine and Surgery will be held at Detroit on Wednesday, June 6, 1934. There will be both a morning and an afternoon program consisting of diagnostic clinics, presided over by men of international reputation, a clinico-pathological conference conducted by men secured for the occasion and there will be a skin clinic which will be an interesting feature. The banquet in the evening will be a testimonial dinner in honor of Drs. Angus McLean, Don M. Campbell and Andrew P. Biddle, presided over by the president of the Association, Dr. J. Milton Robb. The May number of this JOURNAL will contain detailed and additional information regarding the clinic and banquet, to which the profession is invited.

ROENTGENOLOGISTS IN MICHIGAN

The following list of physicians limiting their practice to x-ray diagnosis or x-ray therapy was published in the *Journal A. M. A.*, February 24, 1934:

Adrian—A. W. Chase; Ann Arbor—Samuel W. Donaldson, Fred J. Hodges, Harold W. Jacox, Carleton B. Pierce; Battle Creek—C. S. Gorsline, Theodore Kolvoord, W. O. Upson; Detroit—J. M. Berris, Carl C. Birkelo, Arthur R. Bloom, George C. Chene, Jas. H. Dempster, B. R. Dickson, Howard P. Doub, F. J. Eakins, Paul Eisen, Wm. A. Evans, Joseph M. Grace, E. Walter Hall, Clyde K. Hasley, Hans A. Jarre, J. C. Kenning, Traian Leucutia, Edward G. Minor, Lawrence Reynolds, S. E. Sanderson, O. J. Shore, Rollin H. Stevens, Henry L. Ulbrich, Clarence E. Weaver, Leslie F. Wilcox, E. R. Witwer; Flint—Myron W. Clift, R. Bruce Macduff; Grand Rapids—Thomas O. Menees, Vernon M. Moore, John H. Muller, Alden H. Williams; Jackson—R. M. Cooley, J. C. Kugler, H. W. Porter; Kalamazoo—A. W. Crane, John B. Jackson; Lansing—Carroll S. Davenport, Fred M. Huntley; Monroe—T. M. Moll; Muskegon—Leland E. Holly; Pontiac—J. E. Church, H. H. Pool; Saginaw—Wm. K. Anderson; St. Johns—T. Y. Ho; Traverse City—E. B. Minor; Ypsilanti—Chas. B. Pillsbury.

NORTHERN TRI-STATE MEDICAL SOCIETY

The annual meeting of the Northern Tri-State Medical Society will be held at Flint, April 10, 1934. The Tri-State Medical Society, as is well known, includes Michigan, Indiana, and Ohio. The place of meeting is the auditorium of the Hurley Hospital, Flint. Lunch will be served in the dining rooms of the hospital and a banquet will be held in the evening in the Durant Hotel. The program is as follows:

Dr. Wm. Clift, Flint, Mich.—"Upper Cervical Dislocations."

Dr. A. Dale Kirk, Flint, Mich.—"Infant Mortality."

Dr. M. S. Chambers, Flint, Mich.—"Principles in Treatment of Diseases of the Heart."

Dr. George Curry, Flint, Mich.—"Musculo-Spiral Paralysis."

Dr. Carl A. Hedblom, Professor of Surgery, University of Illinois, Chicago—"The Selective Surgical Treatment of Pulmonary Tuberculosis."

Dr. Clifford G. Grulee, Professor of Pediatrics, Rush Medical College, Chicago, Ill.—"Some Interesting Conditions in the Newly-born Infants."

Dr. Wm. M. Donald, Professor of Medicine, Detroit College of Medicine and Surgery, Detroit, Mich.—"What to Do When the Diabetic Comes."

Dr. George C. Hale, Professor of Medicine, University of Toronto, Canada, London, Ont., Can.—"Sleep."

Luncheon.

Dr. Norman F. Miller, Professor of Obstetrics, University of Michigan, Ann Arbor, Mich.—"The Anticipation and Management of Toxemia of Pregnancy."

Dr. Herman L. Kretschmer, Professor of Urology, Rush Medical College, Chicago, Ill.—"Changing Trends in the Treatment of Prostatic Obstructions."

Business Meeting.

Dr. Louis J. Hirschman, Professor of Proctology, Detroit College of Medicine and Surgery, Detroit, Mich.—"The Sclerosing Treatment of Hemorrhoids—Its Indications and Limitations."

Dr. Wilder Groves Penfield, Professor of Neurological Surgery, McGill University, Montreal, Quebec, Canada—"Epilepsy." "Classification and Management of Cases."

Dr. Arthur E. Hertzler, Kansas City, will address the assembly on "The Management of Goiter." Dr. Harry E. Mock, Associate Professor of Surgery, Northwestern University, will also be a guest speaker.

THE DOCTOR'S LIBRARY

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection will be made for review, as expedient, or in the interests of our readers.

RECENT ADVANCES IN VACCINE AND SERUM THERAPY. By Alexander Fleming, F.R.C.S. (Eng.), Professor of Bacteriology in the University of London; Assistant Director of the Inoculation Department, St. Mary's Hospital, and G. F. Petrie, M.D. (Aberd.), Bacteriologist-in-Charge, Serum Department Lister Institute, Elstree. With 5 Illustrations. P. Blakiston's Son and Company, Philadelphia, 1934.

This series of recent advances is authoritative and complete. The present volume may be taken as presenting the most recent knowledge on the subject of vaccine and serum therapy.

RECENT ADVANCES IN ENDOCRINOLOGY. By A. T. Cameron, M.A., D.Sc. (Edin.), Professor of Biochemistry, Faculty of Medicine, University of Manitoba; Biochemist, Winnipeg General Hospital. With 54 figures, including two plates. P. Blakiston's Son and Company, Philadelphia, 1934.

This volume of nearly 400 pages deals with the subject of the thyroid gland and iodine metabolism, the parathyroids, islets of Langerhans and insulin, the adrenals, pituitary, the endocrine secretions of the organs concerned with reproduction. The author discusses some actual and presumptive endocrine principles. The work is adequately illustrated and contains extensive bibliographies, following each chapter.

TREATMENT IN GENERAL PRACTICE. By Harry Beckman, M.D., Professor of Pharmacology at Marquette University, School of Medicine, Milwaukee, Wisconsin. Second Edition, Revised and Entirely Reset. 889 pages. Philadelphia and London. W. B. Saunders Company, 1934. Price \$10.00 net.

Reprinted five times since it first appeared in 1930, Beckman's work on Treatment has been thoroughly revised, necessitating complete resetting. The present second edition comprises complete descriptions of the most approved methods of treatment of every condition that is apt to present itself to the general practitioner. The matter is conveniently arranged and well indexed. It fulfills all that is required of a work on treatment.

A DIABETIC MANUAL FOR THE MUTUAL USE OF DOCTOR AND PATIENT. By Elliott P. Joslin, M.D., Clinical Professor of Medicine, Harvard Medical School; Medical Director George F. Baker Clinic for Chronic Disease at the New England Deaconess Hospital; Consulting Physician, Boston City Hospital, Boston, Mass. Fifth Edition, Thoroughly Revised. Illustrated. Lea & Febiger, Philadelphia, 1934.

This little work of somewhat over 200 pages is beautifully illustrated and written in clear language so that any intelligent layman can easily follow it. Since the matter of care of the diabetic is largely one of education, Joslin's work forms an admirable little textbook for the diabetic as well as for the general practitioner who sees all such cases in their incipency.

MODERN CLINICAL PSYCHIATRY. By Arthur P. Noyes, M.D., Superintendent of State Hospital for Mental Diseases, Howard, Rhode Island. Formerly First Assistant Physician at St. Elizabeth's Hospital, Washington, D. C. Formerly Chief Executive Officer at the Boston Psychopathic Hospital. W. B. Saunders Company, Philadelphia, 1934.

Psychiatry has been conceded the peculiar field of the specialist, yet in this state short intensive courses

are being prepared for the general practitioner. A five day course was presented at the State University in January last. The field of the general practitioner is gradually enlarging so that one who knows no psychiatry or neurology is to that extent handicapped in the care of certain patients. Modern Clinical Psychiatry is really a monograph on the subject though it comprises somewhat less than 500 pages. Psychiatry is written up as that branch of medicine which deals with the diagnosis and treatment of disturbed personality functions. This surely is within the field of general practice.

MENTAL HYGIENE IN THE COMMUNITY. By Clara Bassett, Consultant in Psychiatric Work, Division on Community Clinics, the National Committee for Mental Hygiene, Inc. The Macmillan Company, New York, 1934.

Mental hygiene has assumed an important place during the past few years probably due to the tempo of the times leading up to the depression as well as the reaction caused by it. This work defines mental hygiene and discusses its importance and value as a means of achieving a healthier and happier community life. While the subject of mental hygiene would seem to relate more nearly to the practice of medicine, it is a subject which commends itself also to such professional classes as educators, ministers, lawyers and even finds a place in parent-teachers associations. The more intelligent parent would undoubtedly profit by such knowledge as may be gleaned from this work. Of course the less intelligent parent is hopeless. Among the subjects treated are Mental Hygiene in Medicine, Mental Hygiene and Parental Education, Mental Hygiene in Industry and in Recreation.

HANDBOOK OF PHYSIOLOGY. By the late W. D. Halliburton, M.D., LL.D., formerly Professor of Physiology, University of London, and R. J. S. McDowell, M.B., D.Sc., F.R.C.P. (Edinburgh), Professor of Physiology, University of London. Thirty-third Edition with numerous illustrations in the text, many of which are colored and four colored plates. Pages 971. 1934. P. Blakiston's Son and Company, Philadelphia.

It is very seldom that a textbook on medicine attains its thirty-third edition. This fact alone would go to indicate that this textbook nearly a century old is still meeting the demands of the day. It was formerly known as Kirke's Physiology. It is a product of the old St. Bartholomew Hospital in London, an institution that goes back within a few decades of the Norman Conquest. The subject of physiology has assumed such importance as well as proportions, when we consider its literature, that a single volume work on the subject embodies a judicious selection of the established facts of the science. This has been admirably performed by the present author, who is Professor of Physiology in the University of London.

MYSTERY, MAGIC AND MEDICINE. The Rise of Medicine from Superstition to Science. By Howard W. Haggard, M.D., Associate Professor of Applied Physiology, Yale University. Doubleday, Doran and Company, Inc., Garden City, New York, 1933.

This is a fascinating little work on the history of medicine, the subject of which is well covered by the title. The book is well illustrated and can be recommended as an interesting presentation. It is particularly adapted to the needs of the layman. The volume is provided with a glossary of proper names with short paragraphic biographies. These names cover probably the majority of the chief personalities in the history of medicine; there are as well descriptions of such subjects as the Caduceus, Bone of Luz, as well as some of the older drugs.

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SOME FUNCTIONS OF THE CEREBRAL CORTEX

BEAUMONT FOUNDATION LECTURE II. THE FRONTAL LOBES

J. F. FULTON, M.D.

NEW HAVEN, CONNECTICUT

I.

In his Rede Lecture on *The Brain and its Mechanism* delivered at Cambridge last December Sherrington draws a sharp distinction between the "physiological" and "mental" activities of the brain³⁶ (pp. 22-23). "What right," he asks, "have we to conjoin mental experience with physiological? No scientific right; only the right of what Keats, with that superlative Shakespearian gift of his dubbed 'busy common sense.' The right which practical life, naïve and shrewd, often exercises. . . . On the one side electrical potentials with thermal and chemical action making a physiological entity held together by energy relations; on the other, a suite of mental experience, an activity no doubt, but in what, if any, relation to energy? As for me, what little I know of the how of the one, does not, speaking personally, even begin to help me toward the how of the other." In another place Sherrington³⁶ remarks (p. 22), "The activity of

a single cell by itself can never amount to a mental experience. For that we have to seek rather some attribute of the organization itself."

I propose in this lecture to speak of the physiological functions of the cerebral cortex rather than of mental functions, and the

discussion will relate particularly to the frontal lobes. In dealing with the frontal lobes however one is brought face to face with activities that are difficult or impossible to describe in present-day physiological terminology. They verge upon the intellectual sphere, and perhaps significant is the fact that it is chiefly in connection with the frontal lobes that one encounters this problem. Lashley²⁹ has pointed out that the conventional ideas of localization of function can not be seriously entertained for higher intellectual activities. This appears true of the lower animals and it is possibly also true of the primates. It would indeed be a corollary of Sherrington's conclusion that mental experience and those more exalted faculties of the human intellect, such as judgment, appreciation of beauty, etc., depend upon the total organization of the brain, rather than upon the integrity of a restricted area. It is important to recognize this distinction between the mental and the physiological activities of the brain, as otherwise confusion is certain to arise in discussing problems of localization. One can no longer entertain doubt of the existence of physiological localization, for it rests, among other things, upon a sound anatomical basis.¹⁹ Localization of the quasi-intellectual functions which have been attributed to the frontal areas offer a greater problem but one which I believe is soluble. Few, however, would venture at present to localize the higher intellectual faculties of the mind, unless they were bold enough to consider the unsolved riddle of the relation of mind to matter.

Knowledge of cortical function has rested in the past upon information obtained from a variety of different channels. Investigators have stimulated various regions of the brain and have recorded the results obtained. They have also destroyed circumscribed areas of the cortex and studied the characteristics of the ensuing deficit. These two methods have yielded valuable information, but it must be recalled that faradic stimulation is an unnatural form of excitation, and the deficit from a given cortical ablation does not always shed light upon the normal activity of the part removed. The work of Pavlov³² and his followers introduced a more objective means of analyzing the results of ablation. The conditioned reflexes, which have received widespread attention as a result of Pavlov's investigations,

are a group of reactions which depend specifically upon the integrity of the cerebral cortex, *i.e.*, they are reflexes integrated at the cortical level. When the cerebral hemispheres are removed, previously established conditioned reflexes disappear and only the simplest forms of response—some doubt whether they are conditioned responses at all—can ever be reestablished. The conditioned reflex technique has already contributed to knowledge of functional localization in the cortex and it will probably present more in the future. Pavlov observed, for example, that removal of the occipital lobes from an animal conditioned to visual stimulation causes abolition or great impairment of the response to light. Similarly Krasnogorski²⁸ proved that motor conditioned reflexes disappear when the motor area is removed.

Progress in physiology generally depends upon the introduction of new methods of inquiry, and to Lashley²⁹ must be given a large share of the credit for advancing the study of cortical function through application of the training techniques of psychobiology, *i.e.*, maze-running, delayed reactions, problem boxes, etc. I have been fortunate in being able to collaborate with one of Professor Lashley's pupils, Dr. Carlyle Jacobsen, who, as an associate of Dr. Yerkes, has devoted his attention during the past few years to the frontal lobes,^{21, 22, 23, 24} and what I am about to say concerning the relation of the frontal lobes to the acquisition and retention of complex skilled movements and to the study of delayed reactions is based entirely upon Dr. Jacobsen's investigations. My own interest has been largely confined to the more purely neurological disturbances which result from circumscribed lesions of the cortex, and I have been forced incidentally to devote much time and attention to the surgical problem of making these circumscribed lesions without injuring the immediately adjacent areas of the cortex. Such progress as has occurred has been largely dependent upon the union of these various techniques of study.

II.

Anatomically the frontal lobe includes that part of the cerebral hemisphere lying rostral to the central sulcus (*i.e.*, the Rolandic fissure, as it was formerly called) and the corpus striatum. It is thus a purely cortical area, and in the primates, including

man, it is possible to distinguish four principal regions: (1) the motor area, in which lie the cells of origin of the pyramidal tract, (2) the premotor area, which also possesses motor function and lies immediately adjacent to the motor area, (3) the frontal eye fields, lying rostral to the motor area on the lateral surface of the hemisphere, and (4) the frontal area, which includes everything else in the frontal lobes, and in man comprises a large proportion of the frontal lobe. Though it is difficult to establish homologies between the brains of monkeys, anthropoid apes and man on the basis of anatomical sulci, the cortical areas just mentioned may be readily homologized on the ground of common microscopical structure, or cytoarchitecture as it is more accurately termed.

We can not here enter into the details of cortical cytoarchitecture, but a few salient features deserve emphasis.⁵ The motor area differs from the premotor and from the eye fields in the structure of its fifth cortical layer in which are found the giant cells of Betz that give rise to the pyramidal pathways. The fifth layer of the premotor area and the eye fields also possess motor cells, but they are smaller although in other respects similar to the Betz cells. The frontal area differs from the other three by the virtual absence of motor cells from the fifth layer.

III.

The motor area, since the days of Fritsch and Hitzig, has been looked upon as one of the regions of the cortex in which the physiological function could with certainty be localized. In Hitzig's monograph, *Untersuchungen über das Gehirn*,²⁰ published in 1874, exactly sixty years ago, the motor area of the monkey's brain was first accurately defined. In the same year David Ferrier working at the West Riding Lunatic Asylum revealed the fact that if the electrically excited region for the arm were removed, the arm suffered profound paralysis, eventually assuming the characteristic hemiplegic posture seen in human beings after an apoplectic stroke. Ferrier demonstrated some of his hemiplegic monkeys at the Medical Congress in London in 1881. Charcot, the great French neurologist, whose histrionic abilities were as remarkable as his clinical insight, exclaimed on seeing Ferrier's monkeys, "Ah, mais oui, c'est une malade"—It is a patient.⁹ After that meet-

ing in London the motor area was actively studied, but little came forth until the well-known papers of Grünbaum and Sherrington¹⁷ and Leyton and Sherrington³⁰ on the excitable cortex of the chimpanzee, orang and gorilla. There had been uncertainty as to the posterior limit of the motor area, but Grünbaum and Sherrington proved conclusively that with ordinary strength of stimulation the excitable cortex ended abruptly at the bottom of the central sulcus, and also that the Betz cells of the fifth cortical layer did not extend beyond this region. In doing this they made the first correlation between the cytoarchitecture of the cortex and its functional activity. They also observed that the anterior margin of the excitable area extended beyond the distribution of the Betz cells. In harmony with this, subsequent investigations have indicated that the area of the cortex responsive to electrical stimulation extends well into the premotor region both in man and animals.⁶ The question therefore arises whether the premotor area, which is excitable though lacking in Betz cells, subserves functions different from those of the true motor area. The answer is decidedly in the affirmative as the following evidence will show.

IV. THE MOTOR AREA

The motor, premotor, frontal and eye areas are designated respectively in the cytoarchitectural maps as areas 4, 6, 9 and 8.⁵ In the diagram projected at the lecture these areas in the monkeys and chimpanzees and man were shown. Area 4, the region of origin of the pyramidal tract, when stimulated faradically, gives rise to movements of individual muscles. Separate foci can be demonstrated in man for all the large muscles of the body. In the anthropoid apes, foci are slightly less discrete, and in the monkey there is an even greater tendency for fusion;¹⁷ thus it is difficult in the monkey to flex the index without movement of the thumb or third digit, whereas from cortical stimulation in man the index can readily be moved independently.¹¹

The consequences of removing area 4 fall naturally under four headings^{12, 26} flaccidity, reflex changes, return of power and "intellectual" deficit.

Flaccidity.—Contrary to generally accepted belief, a lesion sharply restricted to area 4 of monkey or chimpanzee gives rise

to a profound flaccid paresis.¹² This is particularly striking in the chimpanzee, in which, after removal of area 4 for the leg, the affected extremity may remain flaccid and motionless for a week after the lesion, and during the subsequent stages of recovery it fails at any time to show increase in resistance to passive manipulation. Power returns slowly, first at hip, then at knee and very late in the digits. Sometimes the fingers remain powerless for as long as two months, and during this period the muscles undergo extensive atrophy. We have never seen a spastic extremity following a lesion restricted to area 4.

Reflex changes.—All reflexes are at first depressed following removal of the motor area. The first reflex to reappear is generally flexion of the hip in response to a strong painful stimulus of the sole. Associated with this there may be weak extension of the toes, and finally after five or six days, a well-marked extensor Babinski response can be obtained; later the Chaddock sign appears. There is no lateral deviation of the toes,²⁶ *i.e.*, no fanning sign associated with the Babinski response of an area 4 lesion. The signs of Rossolimo and Mendel-Bechterew are not exaggerated after lesions of area 4. Deep reflexes are depressed for a week or two and then return to normal; they may even become exaggerated though the extremity continues flaccid.

Motor power.—One of the unexplained phenomena of clinical neurology is the return of motor power following a cortical lesion. If the pyramidal area is completely extirpated what other part of the nervous system steps into the breach? Leyton and Sherrington³⁰ pointed out that it could not be the motor area of the opposite hemisphere, because its removal does not cause additional impairment on the ipsilateral side. We shall see in a moment that though true for the arm this is not strictly true for the leg,¹⁴ and it is certainly not true for the premotor area in which rich bilateral representation exists.

"Intellectual" deficit. — Lashley²⁹ and Jacobsen²² have trained animals to negotiate complex problem boxes and have then removed the motor area. Following the procedure the animals exhibited no failure of memory. Thus, if on account of the paralysis of its hand the animal can not work a problem box which it had previously mastered, it quickly uses its foot to accomplish

the same maneuvers. There is similarly no disturbance displayed in the delayed reaction test. If an animal sees food put under one of two cups, it selects the correct cup for food even after several minutes' delay.

V. THE PREMOTOR AREA

Turning now to the premotor area which is subdivided into two parts, area 6a α and 6a β , one finds that under light ether anesthesia the entire region is responsive to electrical stimulation.^{6, 11} The movements, however, are less discrete and tend to involve whole extremities rather than individual muscles. From the rostral part (area 6a β) complex and seemingly purposeful movements are often evoked. From its caudal part (area 6a α) movements tend to be more discrete, but the discrete responses disappear when the cortex is incised superficially between areas 4 and 6; there can be no room for doubt that discrete movements depend upon the integrity of the pyramidal tract, since they disappear when area 4 is itself completely removed. If the premotor area is stimulated some weeks after complete ablation of area 4, the complex patterns of movement involving whole extremities and the "adversive" reactions such as turning of the head and eyes, still remain. The premotor area must therefore have connections with the spinal cord which are quite independent of the pyramidal tracts.

The effects of removing the premotor area will be discussed²⁶ under four headings, spasticity, reflex changes, return of motor power, "intellectual" deficit. The fifth category of disturbances, namely those which affect the autonomic nervous system, were considered in the last lecture.

Spasticity and forced grasping.—When the premotor area of a chimpanzee is removed at a primary operation, or after previous removal of the motor area, the animal develops, almost at once (*i.e.*, within four or five hours of operation), a marked disturbance in the resting posture of the extremity characterized by great increase in resistance to passive manipulation. In the upper extremities the posture assumed is one of strong flexion, and in the lower extremity extension with slight abduction. Lengthening and shortening reactions are present and one experiences the "clasp-knife" effect when one attempts to overcome

the resistance to movement of a given joint. Particularly striking is the fact that strong spasticity develops in the extremities of an animal from which area 4 has previously been removed.

Associated with spasticity is the abnormal prehension response, generally referred to as "forced grasping." During the first week after the premotor area has been removed a strong flexion movement of the digits occurs whenever an object is placed in the hand, and the animal is unable to relax its grasp.^{15, 34} So intense is the reaction that it is generally sufficient to support the animal's entire weight. In the course of one to two weeks forced grasping disappears, but removal of the premotor area from the second hemisphere will cause its return, in all four extremities. Spasticity tends to disappear when grasping disappears. Both phenomena, however, fluctuate in intensity with the position of the body in space,³ and there is a curious reciprocal relation between these two manifestations of disordered posture. Thus, when an animal from which the premotor area has been removed bilaterally is placed in the lateral position, the extremities on the uppermost side exhibit forced grasping and little spasticity while the extremities of the under side show great spasticity and no forced grasping. The fact that forced grasping changes as does spasticity with the position of the body in space, places the phenomenon in the category of postural reflexes. There is reason therefore to believe that the premotor area is concerned in integration and correlation of the extra-pyramidal pathways.¹³

Reflex changes.—The reflex changes following extirpation of the premotor area are of considerable interest to neurologists because of their obvious localizing value. All tendon reflexes are immediately augmented after a premotor lesion, and this includes the special reflexes of the digits known as the signs of Rossolimo, Mendel-Bechterew and Hoffmann, which are evoked by applying stretch to the digital tendons.^{26, 35} Tapping the plantar surface gives involuntary flexion of the toes (the sign of Rossolimo), tapping the dorsal surface of the foot gives a similar response (the sign of Mendel-Bechterew), and flicking the tips of the fingers causes flexion of the fingers and adduction of the thumb (the sign of Hoffmann). In addition to these tendon reflexes an exaggerated flexion response of the digits, sometimes

known as the "clutch" reflex of the toes (the opposite of the Babinski), is present on stroking of the plantar surface. A tendency toward lateral deviation of the toes (the fanning sign of Babinski) is also seen after a premotor lesion. On the basis of these reflex changes and those mentioned above under the motor area one can distinguish lesions of the motor from the premotor area.

Motor power and ipsilateral representation.—Following a primary lesion of the premotor area, great awkwardness develops in skilled movements, associated with reluctance to use the affected extremity (see next paragraph). Much more significant, however, is the fact that when the premotor area is removed after previous ablation of the motor area there is great augmentation in the preëxisting motor deficit. An animal from which the motor and premotor regions have been extirpated from one side regains, however, sufficient cortical control of the spastic contralateral extremities for running, walking, climbing, etc. If, however, the motor and premotor areas of the opposite hemispheres are also removed, the animal lapses into a state of permanent cortical paralysis, and the bodily reflex status of such a bilateral motor-premotor preparation is equivalent to that of a thalamic animal. If one of the cortical areas remains intact (motor or premotor of either hemisphere), the animal regains some degree of cortical innervation of all four extremities. This, it has seemed to us, gives indisputable evidence of bilateral representation in the motor and premotor areas.^{7, 13, 14}

"Intellectual" deficit.—The curious awkwardness exhibited after isolated premotor lesions is due essentially to an impairment of the faculty of integrating skilled motor adjustments. Jacobsen has summarized his studies on the chimpanzee as follows:²²

"The disturbances following unilateral lesions of the premotor area in chimpanzees are of a different character. Whereas lesions of area 4 rendered the execution of movements difficult, they did not impair the patterns of response to the specific latches of the problem boxes. By contrast, although unilateral premotor lesions did not result in residual motor deficits which made the execution of fine adaptive movements difficult, the organization of these movements, as patterns of response to the specific situations presented by the problem boxes, was greatly disturbed and necessitated post-operative relearning. This result is in harmony with the deductions of Campbell and others, from anatomical observations, that the premotor area plays an im-

portant role in the integration of the complex adaptive activities. Proper evaluation of the findings must await further experiments on bilateral extirpations of area 6 and its relation to the motor areas."

All this constitutes evidence that as one proceeds rostrally with frontal lobe extirpations deficit in the more purely intellectual sphere begins to make its appearance. The inability to carry out delicate motor adjustments, which is so striking in bilateral premotor animals, has been regarded as similar to the "apraxia" seen in clinical cases. On reaching the frontal association areas the problem passes even more poignantly into—shall I say—the "spiritual" plane!

VI. FRONTAL ASSOCIATION AREAS

The frontal association areas have been something of a *bête noire* to neurophysiologists² whose attention is generally centered upon functional disturbances. When the frontal areas are removed unilaterally from monkeys, baboons, chimpanzees, or man no disturbances can be detected which are really amenable to physiological analysis—provided of course one does not encroach upon the eye fields. If these areas are disturbed the animal is unable to move its eyes to the opposite side for 24 to 48 hours; after that eye movements become normal. If, however, both frontal areas are removed changes occur which more readily lend themselves to analysis. Monkeys and baboons tend to become restless, pacing the floor constantly night and day. They generally lose weight and despite this fact they consume large quantities of food. The signs of pathological hunger, however, are more marked when the extirpation has encroached upon the anterior end of the premotor region. In human beings after bilateral removal of the frontal areas there is great distractibility and a tendency toward boastfulness and general euphoria, but behavior is not obviously bizarre except when matters of judgment and decision are involved. It may amuse you to know that a member of a certain stock exchange who lost both frontal areas on account of an expanding malignant tumor, was able after the operation to return to his business and he fancied that he carried on his duties without difficulty!⁴

There is no disturbance of the postural mechanism after bilateral frontal extirpa-

tion and no reflex changes, but Jacobsen's²⁴ analysis of trained animals has made it manifest that such animals have great difficulty in executing previously acquired skilled movements requiring a series of motor acts spread out in time and occurring in definite sequence. A problem box demanding a single maneuver is readily negotiated, but one calling for three different acts in set order is mastered only with great difficulty, if indeed it can be learned at all. Essentially, the loss appears to be a defect of "immediate memory," and this inability of the operated animal to regulate its present behavior in terms of immediately past experience is even more strikingly demonstrated in the delayed reaction tests. Thus a normal monkey is able, after a delay of several minutes, to select the cup under which food has been hidden; the animal with a bilateral extirpation of the frontal association areas obviously forgets, almost immediately and certainly within two or three seconds, under which one of the two cups the food had been placed. Experiments upon other areas of the cortex indicate that this behavioral deficit is found only with lesions of the frontal association areas.

Jacobsen²⁵ summarizes his conclusions as follows:

"It may indeed be hazardous to identify too closely the apparent defects in immediate memory observed in the monkeys with the deficit shown in cases of dementia in man, but the obvious similarity invites such a comparison. Baumann and Grünbaum have pointed out that in organic dementia the capacity to keep in mind a number of separate elements and at the same time manipulate them in thought is an outstanding deficit. The careful study of a case of bilateral frontal lobectomy in man by Brickner has indicated that there was little impairment of the symbolic processes, habits of speech, or the fund of information previously acquired by this individual. There was, however, marked inability to hold together and to manipulate the various elements of experience over a period of time, essentially a defect in logical thinking rather than a defect in recalling elementary associations. If now we consider the experiments on extirpation of frontal areas in the monkeys, we note that the outstanding defect is the inability to remember for even a few seconds in the face of other incoming sensory data a single experience, such as seeing food placed under one of two cups. To identify human reactions with delayed response in monkeys leaves one open to severe criticism, and such is not our intention, but we would point out that with the destruction of the frontal association areas there has been removed a mechanism which is essential to the more complex forms of behavior which we call logical thinking, judgment, etc., namely—the capacity to regulate the activity of the moment in terms of the immediately past experience. This ability seems to be peculiarly dependent upon the intactness of the frontal areas."

VII. CLINICAL INFERENCES

The recent physiological studies on the functions of the frontal lobes throw light upon various phases of clinical neurology. In the first place the analysis of the deficits resulting from lesions of area 4 indicates that interruption of the pyramidal tract does not in itself cause spasticity. Indeed the early stages of recovery from ablation of the motor area are characterized by the opposite condition, namely a marked flaccid paresis. "Hypotonia" is said to occur in man with lesions of the postcentral convolution, but all reported cases show evidence of damage very close to the central sulcus (see especially Head¹⁸), and my suspicion is that in these cases the pyramidal tracts are damaged without serious impairment of the premotor radiations.

The lesions of the so-called motor area in man generally involve the anterior central gyrus, which includes the premotor area to a much greater extent than the motor area. I have illustrated this by placing a diagram of the small encapsulated tumor of Potts and Weisenburg's³³ well-known case upon Foerster's cytoarchitectural map of the human brain. The tumor was a small encapsulated carcinoma, 2 cm. in diameter, which lay just rostral to the central sulcus in the region of the arm representation. It will be seen that rather more than four-fifths of the surface of the hemisphere affected is occupied by area 6 α and area 8. It is scarcely surprising therefore, in view of experimental work, that the arm of the patient in question became spastic before death.

A still more interesting application of these experimental studies arises from a consideration of focal epileptic seizures. Irritation from an expanding lesion of area 4 or of the caudal part of area 6 α generally gives rise to seizures that begin focally in a small muscle or muscle group (e.g., with movements of the thumb or corner of the mouth). Other seizures commence with turning of the head and with complex movements affecting a whole extremity, similar to those evoked by primary stimulation of area 6 β . Recognition of such seizures¹¹ gives information of immediate localizing value. They are generally associated with a definite clinical picture which has been designated the "syndrome of the premotor area."^{16, 27} When considered from the point of view of clinical history, the symp-

toms presented by such cases generally appear in definite sequence.

1. *Disturbance of skilled movements.*—A patient may discover that buttoning a shirt, turning an egg-beater, playing the piano or some other highly skilled act becomes difficult to perform even though gross power of the extremity remains normal. The deficit comes on without the occurrence of tremor and can not therefore be confused with disturbances in the cerebellum or basal ganglia. Gradually more extensive impairment of motor power develops with the appearance of spasticity.

2. *Spasticity and increase of reflexes.*—Some time later the patient becomes aware of awkwardness of movement, the extremity tends to become stiff, and examination discloses spasticity and increase in tendon reflexes. If the lesion happens to be slowly growing, the degree of spasticity is likely to be slight.

3. *Forced grasping.*—Late in the development of the premotor syndrome forced grasping appears, generally associated with very marked augmentation in tendon reflexes of the digits.^{16, 27} If forced grasping is poorly developed it can generally be brought out by placing the patient in the lateral position with the affected extremity uppermost, which is the maximal position for the reaction. The Babinski response is generally not present, although lateral deviation of the toes may occur; occasionally exaggerated flexion of the toes is seen in response to plantar stimulation.

4. *Vasomotor disturbance.*—The whole affected side of the body may show vasomotor disturbance with increased sweating. In some instances the temperature is lower and in some instances higher than on the normal side. The experience with animals has been that with destruction of the premotor area the temperature of the affected extremities is generally lower (Lecture I), and this was the experience of Madame Bénisty¹ in war cases, and of Olsen³¹ in cases of unilateral cerebral atrophy in children.

In addition to elucidating the premotor syndrome the experimental studies just described throw light upon the manifestations of hemiplegia seen in clinical cases. A hemorrhage destroying the internal capsule is likely to interrupt the radiations both from area 4 and 6 which would cause paresis with marked spasticity. One would

also expect on this basis the findings in the chimpanzee that forced grasping would be present in the affected extremity and that the posture would change with position of the body in space. Very little attention has been paid to forced grasping in hemiplegia, but the alteration of posture of hemiplegics with change of position of the body is well known and has been frequently described. Capsular hemiplegias associated with flaccid paresis are sometimes encountered, and they are generally accompanied by marked sensory deficit. Though autopsies on such cases have not yet been analyzed in the light of experimental findings, it seems likely that in such cases the hemorrhage is posteriorly situated in the capsule, sparing the radiations from area 6 which lie for the most part in the anterior end of the capsule.

The disclosures concerning the premotor area may in addition have a bearing upon athetosis. Bucy and Buchanan⁸ had occasion to stimulate the premotor area in a case of extreme hemi-athetosis. The athetoid movements were prone to come in seizures; at operation stimulation of area 6a α in the region of the arm representation caused a typical athetoid seizure. The area of cortex from which the attack had been evolved was removed. The extirpated block of tissue conformed with the cytoarchitecture of Brodmann's areas 4 and 6a α and there was evidence of extensive cellular degeneration in all layers. Following the operation the athetoid movements ceased completely, and the extremity became slightly spastic. During several epileptiform seizures which occurred subsequently the arm was not involved. These clinical studies strongly suggest that a modification in extrapyramidal control resulting from extirpation of area 6 may lead to cessation of athetoid movements. The observation is highly significant and one awaits further clinical investigation with great interest.

* * *

VI. SUMMARY

Mental and physiological functions of the brain, though closely related, for the present are best treated independently. Localization of physiological function has been clearly demonstrated, but the more subtle activities of the mind probably depend, as Sherrington has argued, upon the organization of the brain as a whole. Higher intellectual functions are nevertheless more gravely affected by lesions of the frontal areas than

by destruction of other portions of the cerebral hemispheres.

In the frontal lobe of monkeys, chimpanzees and man four principal regions may be distinguished: motor area, premotor area, eye field and frontal association area. Stimulation of the *motor* area gives rise to isolated movements of individual muscles. In chimpanzees ablations sharply restricted to the motor area cause flaccid paresis, depression of reflexes, and the extensor sign of Babinski, but no "intellectual" deficit. Return of power following a motor area lesion is extensive both in man and animals; though ipsilateral premotor and the opposite motor and premotor areas all play a part in compensating for the deficit.

Stimulation of the *premotor* area also evokes discrete movements in the muscles of the opposite side which are less sharply localized than those obtained from area 4. These are abolished when the cortex is superficially incised between areas 4 and 6, or when area 4 is removed; stimulation of the premotor region gives rise also to adverse movements of the head and eyes, and to complex patterns of response involving the ipsilateral as well as the contralateral extremities. These movements are independent of the pyramidal pathway. Removal of the premotor area in the chimpanzee causes impairment of skilled movements, spastic paresis, forced grasping and a form of intellectual deficit characterized by loss of complex patterns of response, and a limitation of the ability to reacquire them.

Bilateral destruction of the motor and premotor areas causes complete paralysis of all cortically innervated movements. Integrity of any one of these areas in one hemisphere makes possible cortically innervated movements in all four extremities.

Ablation of the *frontal association areas*, if bilateral, causes no disturbance of the postural mechanism and no alteration in reflexes. Animals in which such extirpations have been made become restless and easily distracted, and they exhibit loss of memory for acquired skilled movements with a complete failure of "immediate memory" which prevents them from profiting by recent sensory experience.²⁵

It has been the case in the past, and it will be true in the future, that the chief stimulus to study the functions of the human body comes from those engaged in the practice of medicine. The generous recognition

which you as clinical investigators have given to me and to my physiological predecessors in this lectureship affords an incalculable stimulus. I can assure you, therefore, that the opportunity to lay this material before you is a high privilege, and one which affords fresh incentive to carry our work forward.

REFERENCES

1. BENISTY (Madame): Les lésions de la zone Rolandique (zone motrice et zone sensitive) par blessures de guerre. Contribution à l'étude clinique des localisations cérébrales. Paris, Vigot Freres, 1918. 216 pp.
2. BIANCHI, L.: The mechanism of the brain and the function of the frontal lobes. New York, William Wood & Co., 1922, 348 pp.
3. BIEBER, I., and FULTON, J. F.: The relation of forced grasping and groping to the righting reflexes (in preparation). Preliminary communication in Amer. Jour. Physiol., 1933, 105:7-8.
4. BRICKNER, R. M.: A study of man with partial bilateral frontal lobectomy. Assn. Research Nerv. Ment. Dis., 1934 (in press).
5. BRODMANN, K.: Vergleichende Localisationslehre der Grosshirnrinde in ihren Prinzipien dargestellt auf Grund des Zellenbaues. Leipzig, Barth, 1909.
6. BUCY, P. C.: Electrical excitability and cytoarchitecture of the premotor cortex in monkeys. Arch. Neurol. Psychiat., 1933, 30:1205-1225.
7. BUCY, P. C., and FULTON, J. F.: Ipsilateral representation in the motor and premotor cortex of monkeys. Brain, 1933, 56:318-342.
8. BUCY, P. C., and BUCHANAN, D. N.: Athetosis. Brain, 1932, 55:479-498.
9. CHARCOT: (Discussion on localization of function.) Trans. Internat. Med. Congr., 1881, 1:237.
10. FERRIER, D.: The functions of the brain. London, Smith, Elder & Co., 1876, xv, 323 pp.
11. FOERSTER, O., and PENFIELD, W.: Der Narbenzug am und im Gehirn bei traumatischer Epilepsie in seiner Bedeutung für das Zustandekommen der Anfälle und für die therapeutische Bekämpfung derselben. Zeitschr. ges. Neurol. Psychiat., 1930, 125:475-572.
12. FULTON, J. F., and KELLER, A. D.: The sign of Babinski. A study of the evolution of cortical dominance in primates. Springfield, Ill., Charles C. Thomas, 1932, xii, 168 pp.
13. FULTON, J. F., and KENNARD, MARGARET A.: The evolution of cortical dominance in primates with observations on the nature and mechanism of hemiplegic spasticity. Assn. Research Nerv. Ment. Dis., 1934 (in press).
14. FULTON, J. F.: Bilateral representation of the lower extremity in the motor cortex of the chimpanzee. Amer. Jour. Physiol., 1932, 101:36.
15. FULTON, J. F., JACOBSEN, C. F., and KENNARD, MARGARET A.: A note concerning the relation of the frontal lobes to posture and forced grasping in monkeys. Brain, 1932, 55:524-536.
16. FULTON, J. F.: Forced grasping and groping in relation to the syndrome of the premotor area. Arch. Neurol. Psychiat., 1934, 31:221-235.
17. GRÜNBAUM, A. S., and SHERRINGTON, C. S.: Observations on the physiology of the cerebral cortex of the anthropoid apes. Proc. Roy. Soc., Lond., 1903, 71:55-58; 152-158.
18. HEAD, H.: Sensation and the cerebral cortex. Brain, 1918, 41:57-253. (Reprinted in HEAD, H.: Studies in neurology, 1920, 2:716-726.)
19. HERRICK, C. J.: The evolution of cerebral localization patterns. Science, 1933, 78:439-444.
20. HITZIG, E.: Untersuchungen über das Gehirn. Berlin, August Hirschwald, 1874, vi, 276 pp.
21. JACOBSEN, C. F.: Recent experiments on the function of the frontal lobes. Psychol. Bull., 1928, 25:1-11. See also: A study of cerebral function in learning: the frontal lobes. Jour. Comp. Neurol., 1931, 52:271-340.
22. JACOBSEN, C. F.: The influence of extirpation of the frontal lobes and of the motor area upon retention of acquired skilled movements in monkeys and chimpanzees. Assn. Research Nerv. Ment. Dis., 1934 (in press).
23. JACOBSEN, C. F., and FULTON, J. F.: The influence of unilateral and bilateral extirpation of the cortical representation of the upper extremities on acquired skilled movements in primates. Xth Internat. Congr. Psychol., 1932. (Abstract privately published.)
24. JACOBSEN, C. F.: The effects of extirpation of the frontal association areas in monkeys upon complex adaptive behavior. Amer. Jour. Physiol., 1934 (in press).
25. JACOBSEN, C. F.: Unpublished study.
26. KENNARD, MARGARET A., and FULTON, J. F.: The localizing significance of spasticity, reflex grasping and the signs of Babinski and Rossolimo. Brain, 1933, 56:213-225.
27. KENNARD, MARGARET A., VIETS, H. R., and FULTON, J. F.: The syndrome of the premotor cortex in man: forced grasping, spasticity and vasomotor disturbance. Brain, 1934 (in press).
28. KRASNOGORSKI, N.: Die letzten Fortschritte in der Methodik der Erforschung der bedingten Reflexe an Kindern. Jahrb. f. Kinderheilk., 1926, 114:256-267.
29. LASHLEY, K. S.: Brain mechanisms and intelligence: A quantitative study of injuries to the brain. Chicago, University of Chicago Press, 1929, xiv, 186 pp., 11 pl.
30. LEYTON, A. S. F., and SHERRINGTON, C. S.: Observations on the excitable cortex of the chimpanzee, orangutan, and gorilla. Quart. Jour. Exper. Physiol., 1917, 11:135-222.
31. OLSEN, A.: Hemiplegi og Hudtemperatur Hospitalstid, 1933, 76:1097, 1103. (Abstracted in Jour. Amer. Med. Assn., 1934, 102:418.)
32. PAVLOV, I. P.: Lectures on conditioned reflexes. Trans. by W. H. Gantt. Intro. by W. B. Cannon. London, Martin Lawrence, 1928, 414 pp.
33. POTTS, C. S., and WEISENBURG, T. H.: Tumour limited to the arm centre, with a discussion of the relation of the Babinski reflex to motor lesions, it being present only if the leg fibres are implicated. Rev. Neurol. Psychiat., 1910, 8:577-586.
34. RICHTER, C. P., and HINES, MARION: Experimental production of the grasp reflex in adult monkeys by lesions of the frontal lobes. Amer. Jour. Physiol., 1932, 101:87-88.
35. SCHICK, W.: Reflex changes after injury to the pyramidal tract in the macaque, gibbon and chimpanzee. Arch. Neurol. Psychiat., 1933, 30:501-513.
36. SHERRINGTON, C.: The brain and its mechanism. Cambridge, University Press, 1933. 36 pp. (N. Y. Macmillan Co.)

MICHIGAN'S CONTRIBUTION TO EARLY ROENTGENOLOGY*

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Many of my predecessors, guided either by pure modesty, shyness or diffidence, have been inducted into the Presidency of the American Roentgen Ray Society with no other ceremony than the acceptance, with a few words of thanks and appreciation of the greatest honor that can be conferred by this, the most consequential group in the world organized to advance and protect the interests of Roentgenology. Others have used this occasion of investiture to bring to your attention some improvement in equipment, some advance in technic or some new application of our specialty in the diagnosis and treat-

*Read before the meeting of the American Roentgen Ray Society held in Detroit in 1932.

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ment of disease. Still others, braver spirits, assuming the rôle of prophets, have prognosticated—even to the ultimate of roentgenology and roentgenologists (and without reflection on these who would look into the future, it is a matter of history and

record that the many fearful predictions have not been fulfilled).

While your new presiding officer believes that he is equal in self-effacement, by nature and inclination, to those who entered into their new duties without undue formality and while he is too timid or cautious or unwise to foretell what is in store for us as practitioners of a most important medical specialty, he is of the opinion that the occasion is unusual and that circumstances justify his postponement for a few minutes the beginning of the scientific program arranged for this, the Thirty-third Annual Meeting of the American Roentgen Ray Society.

But at this moment it is meet that you be welcomed to Detroit. On two previous occasions Michigan roentgenologists have had the good fortune to serve as hosts to the American Roentgen Ray Society and its friends, the first gathering being held in 1910, with Dr. George E. Pfahler as president, and the second in 1926 under the presidency of the late Dr. Russell D. Carman and vice presidency of Dr. P. F. Butler. For this third opportunity to serve you, the Detroit and Michigan members are grateful and they and their confreres who have labored to make ready the several features of the program submitted to you, extend most friendly greetings. It is our hope and desire that you will find help and inspiration from our scientific program and relaxation and joy and fellowship in our non-medical sessions.

Believing that the time is propitious for the urging of our membership to give attention to the study and recording of the history of the development of our specialty in the several states, I have elected to address you on "Michigan's Contribution to Early Roentgenology" with the hope that others will deal likewise with their own states and thus provide our Society archives with material that will have human and historic interest to the membership that is and is to come. This desire to voice esteem and gratitude to the pioneers in our field is a just and proper one, for did not the Father of Medicine say, "I will honor as my father the man who teaches me the art"? And should we not have and show proper respect for our predecessors, for is it not true, as Sir Michael Foster observes, "that it is one of the lessons of history of science that each age steps on the shoulders of the ages which

have gone before; the value of each age is not its own, but is in part, a large part, a debt to its forerunners"?

As I undertake to evaluate and record the vital and interesting experiences of Keenan, Crane, Hulst, Hickey, Varney, Stevens, Case, and others, who contributed to the advancement of roentgenology in Michigan, I am conscious of the difficulty of my task. So pregnant is the theme, it is worthy of the skill of a William McMichael. Equally as enticing and thrilling as the autobiography of Dr. John Radcliffe's "Gold Headed Cane" would be a description of some of the unusual incidents in the lives and works of these pioneers who builded so well for us who have followed.

This is not the occasion and time will not permit me to give credit due to all who assisted in the development of roentgenology in Michigan. We are under especially heavy obligations to Dr. H. R. Varney for his very early and excellent work in connection with the determination of the value of x-ray in dermatology, and Dr. R. H. Stevens, entering roentgenology also from dermatology, contributed much of value, and the efforts of Case and others are worthy of mention. But three of the contributors were outstanding in their performance and it is of these I wish to speak—Kennan, Crane and Hulst—in the chronological order in which they began their studies and experimentation in x-ray.

For several years prior to 1895, many professional and a few amateur physicists were interested in high potential electrical equipment, repeating the experiments of Crookes, Hittorf and others who were observing the phenomena incident to the passage of electric currents of high tension through tubes of varying degrees of vacuity.

For many years we have held the opinion that the first demonstration and application of x-ray in Michigan was at the University at Ann Arbor in the laboratory of Professor H. S. Carhart, teacher of advanced physics. But we have only recently learned that his work was preceded, by several weeks, at least, by two senior students in the Physics Laboratory at our State Agricultural College. This information was obtained from an edition of the *Detroit Journal*, a daily newspaper, dated March 4, 1896. Under the headline, "Leather and Paper—X-rays Penetrated Them at the Agricultural College and Photographed in Solid Sub-

stances," was a description of the work of the students, McGee, '96, and Eastman, '97, who had been successful in obtaining satisfactory skiagrams, as they were then known. They had placed coins and a pencil in a purse on a sensitive plate and after four hours' exposure and development they were able to see clearly the coins and discern the lead in the pencil. And in a private communication from the College within the past few days, I learned that they had examined a bird and were able to demonstrate the skeletal structure. This apparently was the first anatomical study done in Michigan.

Apparently simultaneously, Carhart and his workers had made continuous effort to repeat the experiments of Roentgen. They had repeatedly tested every tube, Crookes and otherwise, in the laboratory collection, without being able to obtain any fluorescence outside of them. At this time the Packard Lamp Company was appealed to and they succeeded in furnishing Carhart with a tube that enabled him to obtain a fluoroscopic record of a hand on a tungstate of calcium screen and to produce a satisfactory record on a photographic plate. This, as stated above, was in the early months of 1896.

But the best and most continuing work was left to be done, not by a large state-supported laboratory with professional physicists and numerous trained assistants, but by a young amateur, almost singlehanded, with a limited equipment and a lesser opportunity for experimentation, in the person of S. M. Keenan. Mr. Keenan was, by vocation, a hospital administrator—but by nature, attainment and practice a scientist and investigator. In his spare hours he had studied physics and especially electricity, and, as rapidly as his purse would permit, he was accumulating electrical equipment. He possessed, at this time, an 18-inch, 2-disc static machine, a small air pump, a 95-volt electric motor and some lesser items. He had no Crookes or other exhausted tubes with which to attempt the production of x-rays, but he had been advised that the carbon filament lamp would serve the purpose and many nights were spent in trying this substitute—of course, without result.

By a curious coincidence, Mr. Keenan was confronted with an opportunity to go to Ann Arbor and consult Professor Carhart—he had followed him closely in his work on radiation and was familiar with his successful production of x-rays. In April, of

this 1896, a young man had entered as a patient in the Eloise Infirmary for treatment of a Flobert rifle injury to his foot. The possibility of determining the presence of a foreign body by means of the new method of examination was debated by Mr. Keenan, the amateur physicist, and Dr. Markel, Eloise Infirmary physician, and an appointment was made with Professor Carhart at the University and Dr. W. J. Herdman of the Medical Department faculty, who was interested on account of his connection with electro-therapeutics. The epoch-making examination was done on April 26, 1896. A sensitive plate was strapped to the injured foot and exposed for forty minutes. The developed plate demonstrated the presence of a bullet deeply imbedded in the region of the first metatarsal. Appreciating the value, for exact localization, of a lateral projection exposure, this was attempted, but owing to the frailty of the tube, the study was not completed. Certainly this was the first medical use of the roentgen ray in Michigan and one of the first in this country for foreign body demonstration. It should be added that on the following day the bullet was removed without difficulty.

It is a mystery why this extraordinary event did not make a greater impression on the medical faculty of our University. In the succeeding months and years, the development of roentgenology was exceedingly slow there, for it was not until 1913 that the Regents began to comprehend the significance and possibilities of the new science. They then appointed Dr. Van Zwaluwenburg Clinical Professor of Roentgenology, who, in spite of makeshift equipment and unsuitable quarters, rapidly established the University as a leader in roentgen diagnosis and treatment—a position maintained and enhanced by Dr. Preston M. Hickey and his successor, Dr. Fred J. Hodges.

Fortunately for Michigan medicine, the lessons to be gleaned from this early use of x-ray in surgery were not lost to all. Mr. Keenan redoubled his efforts, often working the entire night, and with the technical aid of his wife and the financial aid of a Detroit citizen—Mr. Joseph Bresler—generating apparatus was developed and tubes supplied. Within less than three months of the successful Ann Arbor demonstration, Mr. Keenan was obtaining satisfactory roentgenograms, and for six years, or until Dr. Varney and Dr. Hickey equipped laborato-

ries in Detroit, he did practically all the roentgenology done in Detroit and Wayne County.

Early in 1897, a patient consulted Dr. Don M. Campbell of Detroit for an eye injury. The presence of a metallic foreign body was suspected and a roentgen study by Mr. Keenan demonstrated its presence. Subsequently, the foreign body was removed, the operation being definitely aided by the roentgen findings. Dr. F. H. Williams of Boston a little earlier had demonstrated a metallic foreign body in the orbit, but it was non-magnetic and not removed, so the distinction of first applying x-ray to the diagnosis and removal of ocular foreign body goes to Dr. Campbell and Mr. Keenan.

We must admire the spirit which impelled Mr. Keenan to continue his studies. In spite of time limitations, forced by the necessity of his performing the duties incident to his position on the administration staff of the Infirmary, though retarded by lack of funds with which to buy new equipment or replace worn out and old equipment, and though handicapped by lack of medical training and access to current medical literature, he persisted in his efforts and very early became a valuable member of the then young American Roentgen Ray Society. It was Mr. Keenan who gave inspiration to Dr. Hickey—and not only inspiration but practical assistance and instruction, and further it was through Mr. Keenan's suggestion and insistence that Dr. Hickey attended the meeting of this Society in Buffalo in 1901 and joined its membership. It is interesting to contemplate what might have happened if this forward-looking student had had the advantage of medical training—and had retained his original gifts in spite of it. Likely he would have had the help of the several articles published in the *American Journal of the Medical Sciences* in 1896 on "The Clinical Application of Roentgen Rays" and as a result he would have hastened to a greater degree the adoption of roentgen study as a valuable diagnostic aid in his locality. The general lack of impression on the physicians of that day made by the report of committees by the editor of that journal to ascertain methods and results in the clinical application of the discovery is incomprehensible. Wherever the full significance of the several reports was appreciated, the advance of the new science was rapid. Witness Philadelphia, where

the survey was made and published—she has continually since had the distinction of affording her hospitals and people the very best in the science of roentgenology, giving it wide application as it developed and making many valuable contributions to its advance. Philadelphia medicine in general, and roentgenology in particular, is under heavy obligation to Leonard, Kassabian, Goodspeed, Pfahler, Pancoast, Manges and others. So, in Detroit and Michigan—while we have not attained the high standards of Philadelphia—a great stimulus was given by the work and example of Keenan and all honor is due him. During his membership in the Society, he was a valuable contributor to the development of apparatus and advance in technic and an efficient teacher. Owing to the policy of limiting members to those possessing a medical degree, Mr. Keenan withdrew, but he has maintained his interest and influence. It is to be hoped that the Society, recognizing his work and conscious of his contributions, will confer on him honorary membership.

At the time of Roentgen's announcement, Dr. A. W. Crane was just becoming established in Kalamazoo, Michigan, as a general practitioner but giving some special attention to laboratory diagnosis and to general surgery. His proficiency, personality and accomplishments qualified him for membership in the Medical Journal Club of his city and it was at a meeting of this Society that he first heard of x-rays—a fellow member, arriving late, informed the gathering of the Associated Press reports that one could look "through a box and see an iron weight."

The gospel of Crane was the gospel of John Hunter—"but why think, why not try the experiment?" So immediately he began to equip himself with information and apparatus and in a few months began one of the most brilliant careers in American roentgenology. Possessing mechanical and technical skill as well as pathological and clinical knowledge, he made early and repeated contributions in both directions. In the improvement of roentgen tubes, he appreciated the importance of having the target made of material of high density. He procured a piece of relatively thick iridioplatinum and had it substituted for the very thin platinum target with most satisfactory results. At the same time he made remarkable improvements in the design and construction

of interrupters. Previous to his experimentation, an interrupter could only be operated on a continuous current, but when his labors in this direction were finished, he had perfected an interrupter that would operate on alternating current.

Not content with making improvements in tubes and interrupters, he turned his attention to coils and here again, when his ideas were incorporated by coil builders, he had a generating apparatus of exceptional capacity and endurance. I am advised that Clyde Snook, while working with Crane, received ideas and suggestions from him that assisted greatly in the development of the interrupterless transformer.

A technical contribution of far-reaching importance was in the design and construction of his fluoroscopic screen. Having, very early, a deep interest in the roentgen study of the chest, he perceived the advantage of a screen of sufficient size to permit a survey of the entire chest, so he had a screen of special size. For financial reasons he was desirous of conserving his new screen so he had it covered with glass and sealed with paraffin. Thus it was that, in spite of much work and long exposures, Dr. Crane was unharmed by the x-ray. The size of the screen and the protection afforded by the glass cover had been sufficient to preserve this pioneer from danger.

Still further evidence of his profound knowledge and insight into the requirements for the proper control and use of x-rays was the conception, design and construction of an instrument for the determination of the quantity and quality of his tube output. Since he was measuring shadows, he named his new device "the skiagraph." The same idea was developed later into instruments called penetrometers, with which only the earlier workers are familiar. And finally, he foresaw the advantage and necessity of concentration of the x-ray beam and fixation of the patient and he developed an apparatus with cone and fixation and compression device. With this relative perfection in tube, coil and interrupter and measuring instruments, it was natural that Crane could produce plates of the highest technical quality and be capable of doing fluoroscopy with unusual thoroughness. While others were requiring many minutes of exposure to obtain diagnostic plates, he was obtaining them in as many seconds. His work was of such a high standard that he was visited by im-

portant physicians from every large city—Leonard, Kassabian, Pfahler, Howard Kelley, Snook, and many others came to see and learn from the master.

Simultaneously, with these technical studies, Crane carried on their clinical application. His first interest was in the chest, and as early as September 27, 1898, he addressed the Kalamazoo Academy of Medicine on "The Roentgen Rays in Diseases of the Lungs." The *Philadelphia Medical Journal*, at that time, offered prizes for essays on medical subjects and Dr. Crane entered the contest with a paper entitled "Skiascopy of the Respiratory Organs." This article was published in the March, 1899, issue, it having been awarded second prize. The judges were evidently lacking in discernment and appreciation, for the subject receiving first place has been entirely forgotten while Crane's article, even today, stands as a model for guidance in fluoroscopy of the chest. It was this article that attracted Pfahler and other early eastern workers to Crane and Kalamazoo. Among these was Dr. W. J. Morton of New York, author of the earliest books on skiagraphy. Dr. Morton had London contacts, his father being Morton of anesthetic fame, and he suggested that Dr. Crane submit a paper to the London Roentgen Society. This was done and Dr. Crane became the first American, aside from Morton, to be honored by election to membership in this organization in 1899, a distinction gained by only a very few since.

His interest rapidly extended to the abdomen as his equipment developed and his advances and contributions here are equally noteworthy. Leonard of Philadelphia saw his first gastro-intestinal work with Dr. Crane, and Pfahler saw his first cancer of the stomach while visiting him. Howard Kelley, while in Kalamazoo, saw for the first time the appendix demonstrated fluoroscopically and by plate. And Dr. Bevan was the first surgeon to be impressed with the accuracy of Crane's work on renal stone demonstration. He was operating on a patient reported by Crane as having three stones—he found two and was inclined to disagree with the roentgen findings but Crane insisted on further search and the third was found. This case preceded the reported work of Leonard on renal calculi.

Dr. Crane attended the 1902 meeting of this Society in Chicago—he joined the following year and began a service to this or-

ganization not excelled by any other member. His scientific papers and exhibits on gastro-intestinal and other abdominal lesions were highlights, for years bringing renown and respect for himself and the Society. A service to the Society for which he was eminently fitted was aborted by the desire of a new publisher of our Journal to have an editor convenient to his place of business. After a few months of leadership of the highest order, the editorship was transferred to New York City.

As great as his technical and diagnostic contributions have been, they are equalled, if not excelled, by his influence for the development and maintenance of the best ethical standards for roentgenologists. His unselfishness and purity of purpose are illustrated by his refusal to accept a piece of apparatus offered by a manufacturer who had profited greatly by his advice and suggestions. As I have studied Crane and his work, I have come to the conclusion that he has contributed more than any other to the present high standard of American roentgenology, adding greatly to its scientific attainments and its respectability. He should be studied as an example by every one taking up the work he has so graced.

Another citizen of Michigan gifted with the power of medical vision into the future was a physician of Grand Rapids, Henry Hulst, one with a fine family and racial inheritance, of gentlemanly manner and bearing, of keen mechanical and scientific insight and steadfastness of purpose.

Following shortly the entrance of Keenan and Crane into the study of the mysterious x-ray, Hulst equipped himself first with a static machine and other necessary apparatus and began promptly a profound study of the thorax. He soon appreciated the necessity of the elimination of respiratory and cardiac movements if satisfactory plates of the thorax were to be obtained. Stimulated by what he had heard and seen in Kalamazoo, he experimented with various coils and interrupters until he found himself possessed with an equipment which made it possible for him to obtain excellent roentgenograms of the chest with exposures of a second and less. When this epoch-making accomplishment became known to his fellow workers, they journeyed to Grand Rapids, doubtful and suspicious, and insisting that he demonstrate and substantiate his announcement. Among these was Dr. Arthur

Holding, who represented a group who were suspicious that Hulst was faking or mistaken, and he went to Grand Rapids to make personal observations. After an evening in the laboratory, he wired Johnston and Boggs, his fellow doubters, "One-quarter second is straight goods."

The competitive spirit that God gives some men was highly developed in Hulst and he continued in the search for equipment and method that would satisfy his need—or shall I say greed—for power and speed. Time, effort and money, all were sacrificed. Building concrete platforms, adding silo-like additions to his home for housing his tower-like static machines, ordering coils of unheard-of capacity—these all indicate the intensity of his purpose. In his own words, "he was trying to catch the tail of the gamma rays."

Rivalling Crane with the quality of his plates, he was soon exhibiting at the Annual Meetings of the Society, first in Chicago in 1902, then in Philadelphia, St. Louis, Baltimore and Niagara Falls. He accumulated an exhibit of such exceptional quality that he was delegated by Dr. Caldwell, president in 1908, to represent him at the International Congress of Roentgenology at Amsterdam, and exhibit his plates. At the same time he addressed this group on "Soft Tissue Roentgenography." This exhibit excited the wonder and envy of all who saw it and his views on soft tissue demonstration were adopted with most satisfactory results. Again what a convincing priority in a field rather recently exploited by some of our contemporaneous workers. And paralleling Crane's advancement as a medical diagnostician made possible by information roentgenologically obtained, Hulst soon became an authority on pulmonary lesions. His writings and discussions on the nature of the root shadows and "linear" markings on chest plates indicate his intimate knowledge of the anatomy of the lung and the structural changes resulting from various diseases.

His rapid roentgenography enabled him to make some original observations of the gastro-intestinal tract. He, very early, demonstrated the changes in size, contour and position of the stomach, associated with changes in body position, similar studies being made on other abdominal structures and also the thoracic structures. His work in this connection excited the interest and at-

tention of anatomists and he was invited to important eastern medical schools to present the new method of observing and teaching anatomy.

His study of the appendix was original and valuable. He showed by several films the peristaltic action of the appendix and its mobility.

In the field of therapy, Hulst probably excelled Crane in the early years. In possession of a coil of great capacity, he was capable of procuring a volume of radiation of good quality with correspondingly good results.

An impairment in health permanently removed Hulst from active practice. Had he retained his physical capacity for work, his influence would have continued with that of Crane. Surely he impressed, profoundly, his day in the field and a high place as a valuable contributing pioneer is assured him.

I am conscious that my efforts to eulogize these three men of Michigan are feeble and insufficient. But I have assurance that the study of their lives as it is related to our work has afforded me interesting entertainment and pleasure and has been a source of mental and spiritual stimulation.

TYPHOID FEVER IN DETROIT 1910-1933 INCLUSIVE

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DETROIT, MICHIGAN

Typhoid fever has become so infrequent in recent years that the matter of determining the source of infection often requires considerable skill. Table I indicates the number of cases and deaths from typhoid fever reported in Detroit since 1910.

The reasons for the gradual decrease in number of cases may be stated to be (a) the chlorination of water, beginning April, 1913; (b) the pasteurization of milk, May, 1915; (c) the protection of city water mains by removal of cross-connections with water supplies from polluted sources; (d) the extension of water carriage sewage disposal; (e) the extension of the use of city water in preference to the use of local wells; (f) the establishment of the filter plant, December, 1923; (g) the search for and the finding of typhoid carriers in recent years.

To say that a person develops typhoid fever after drinking water from a well or after eating food while on a picnic, is not acceptable unless it can be shown that other attendants have developed typhoid fever at about the same time. Sporadic cases of typhoid fever do not become infected in this manner. In determining the source of infection of a case reported in a particular municipality, one of the first things to determine is whether or not the patient does have typhoid fever or one of the allied paratyphoid fevers. When the diagnosis has been made, the date of onset can then be determined as accurately as possible. When this date is found, it is possible to state that the patient became infected in about ten to twenty-one days prior to the date of onset. If during that period the patient has been on a journey, it will be necessary to find out if he has been associated with a case of typhoid fever or has consumed food or

drink from an infected source. When such is the case, an effort is made to have the patient charged back to the municipality

TABLE I

Year	Cases	Case Rate Per 1,000 Population	Deaths	Death Rate Per 100,000 Population
1910	583	1.25	91	10.5
1911	386	.7	79	14.3
1912	365	.64	93	16.4
1913	364	.59	146	24.
1914	470	.71	71	10.8
1915	410	.56	72	9.9
1916	393	.53	87	11.8
1917	471	.57	107	13.
1918	255	.28	67	7.4
1919	260	.28	49	5.3
1920	199	.19	52	5.1
1921	393	.42	55	5.8
1922	194	.2	50	5.3
1923	134	.13	42	4.
1924	132	.12	30	2.7
1925	148	.12	33	2.6
1926	129	.10	28	2.2
1927	93	.07	16	1.2
1928	69	.05	14	1.
1929	72	.05	13	.9
1930	68	.04	17	1.1
1931	115	.075	12	.8
1932	57	.04	9	.6
1933	48	.03	10	.7

TABLE II. TYPHOID FEVER CASES BY SOURCE OF INFECTION.
DETROIT—1914 TO DATE

SOURCE	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
1. Outside	94	145	129	135	116	127	85	88	53	54	54	59	74	48	36	37	30	40	25	12
2. Questionable diagnosis	86	0	32	52	0	0	10	17	14	7	5	7	0	0	0	1	0	0	0	0
3. Milk	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4. River	22	26	15	85	37	32	7	56	20	5	4	4	3	2	3	2	4	9	3	3
5. Boats	37	23	10	13	5	0	3	1	0	0	0	0	0	0	0	2	0	0	0	0
6. Contacts	39	28	5	39	18	24	17	70	14	7	11	3	10	14	2	4	10	12	2	5
7. Others (unknown)	148	185	224	141	77	77	77	161	83	61	62	70	42	26	27	26	22	51	24	20
8. Oysters	0	3	3	0	0	0	0	0	0	0	6	5	0	0	0	0	0	0	0	0
9. Typhoid carriers	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	2	3	3	8
10. Other foods	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0
11. Well water	0	0	4	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	470	410	422	471	255	260	199	393	194	134	132	148	129	93	69	72	68	115	57	48

TABLE III. TYPHOID FEVER CASES, THE SOURCES OF WHICH WERE
NOT DETERMINED.

	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
Cases reported	470	410	422	471	255	260	199	393	194	134	132	148	129	93	69	72	68	115	57	48
Cases, source not determined	148	185	224	141	90	85	77	161	83	61	62	70	42	29	28	26	22	51	24	20
Per cent of cases, sources not determined	35	40.5	53	30	31	30	38.7	40.7	42.8	45.5	43.3	48	32.3	31	40.6	36	32.4	44	42	41.7

TABLE IV. TYPHOID FEVER CASES DERIVING INFECTION IN DETROIT

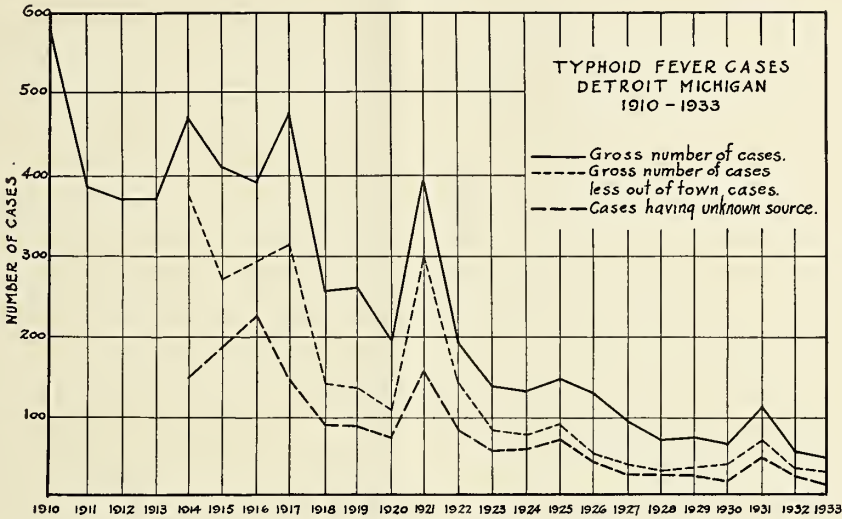
	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
Cases reported	470	410	422	471	255	260	199	393	194	134	132	148	129	93	69	72	68	115	57	48
Cases, source outside Detroit	94	145	129	135	116	127	85	88	53	54	54	59	74	48	36	37	30	40	25	12
Cases infected in Detroit	376	265	293	315	139	133	114	305	141	80	78	89	55	45	34	35	38	75	32	36

where the infection was obtained. Sometimes it happens that the patient becomes ill with typhoid fever before returning home, or perhaps becomes ill with typhoid fever

pare a table which will indicate the exact number of cases whose source of infection was in Detroit.

Table IV indicates the number of cases

CHART I



and is transferred to a hospital in another municipality where the diagnosis is made. Under all three of these conditions, the patient should not be charged against the municipality in which the case was first reported, but should be charged to the municipality where the infection was obtained.

Table II indicates the number of cases reported in Detroit by years since 1914 and it states the source of infection so far as it was possible to obtain it. From this table it will be apparent that milk has not been a source of infection since 1914. No cases of typhoid have been obtained from the boats on the lakes since 1921 except in 1929 when two employees became infected. Oysters have been a source of infection only in the years 1915, 1916, 1924, and 1925 and other foods have been incriminated only in the year 1922. Well water has not been known to carry infection since 1918.

From Table II it will also be noted that a considerable number of cases each year have been studied, but the source of infection has not been definitely determined. These cases are recorded in Table III. From this table it will be observed that in from 30 to 50 per cent of the cases reported each year it has not been possible to determine the exact source of infection. On account of this fact, it is not possible to pre-

of typhoid fever deriving their infection in Detroit so far as it is known. Known sources of infection from outside of Detroit have been subtracted from the number reported in the city, leaving a residue which indicates the approximate number of cases infected in Detroit. It is possible that had the source of infection of the cases mentioned in Table III been determined, the source of some of them might have been found to be outside of Detroit. This would make the number of cases recorded in Table IV, as having been infected in Detroit, a much more accurate statement. This point is brought out more clearly in Chart I, where the gross number of cases is indicated by the whole line; the gross number of cases less the out-of-town cases by the dotted line; and the number of cases from unknown sources by the broken line.

It is clear that if one were sure that there were no sources outside the city in this latter group (those indicated by the broken line), one would be better satisfied with the numbers indicated by the dotted curve. However, from a study of this dotted curve it appears that the number of cases of typhoid fever reported in Detroit from 1914 to 1923 made a rapid decline from year to year. Since 1923 it is apparent that the major sources of infection have not been present so that the incidence each year has been low

TABLE V

Month	Residents of Detroit			Residents Outside of Detroit		
	Primary	Secondary	Deaths	Primary	Secondary	Deaths
January and February			No cases			
March	1			1		
April	4	1	2			
May	4	1		1		1
June	8		1			
July	10	1	1	1		
August	28	1	4	2	2	1
September	24	9	1	3		
October	3	3	1			
November	4					
December	3					
TOTAL	89	16	10	8	2	2

TABLE VI

PRIMARY			SECONDARY		
Typhoid carriers	Swimming in polluted water	Drinking infected water	Contacts in the home	Contacts in hospital	Total
3	6	3	9	3	24

and much more constant. By reference to Table II, it will be noted that typhoid carriers were first observed in 1927. It is probable that they have been present in decreasing numbers through the years, but the effort to detect them was not successful until 1927.

If we can disregard the cases of unknown sources it is apparent that through the years the greatest number of cases had their sources outside of Detroit; the next most important source is contact with known cases of typhoid fever. Now that the sanitary improvements of the city, including the care of the water supply and the milk supply, have been perfected, it is apparent that contacts with known cases is the greatest danger point. A later report by the Engineering Division will indicate the correlation between the decrease of typhoid fever in the city with (a) the increase in sewer connections, (b) increase in connections to the city water lines and discontinuance of wells, and (c) pasteurization of milk. This correlation is apparent, but a later report will present a careful study of the data. Since 1922, swimming in the Detroit River and in River Rouge and certain parts of Lake St.

Clair, while they have been sources of infection, have not been the important ones that they were prior to this date.

During the past few years considerable special effort has been made to determine the sources of infection. In 1931 the source of infection of 51 out of 115 cases could not be surely established. The probable sources of 13 of these cases were partially established.

Table V indicates the incidence of typhoid fever cases in Detroit by months during 1931, and it also indicates those who were resident outside of Detroit. From this table it is apparent that there were 115 cases reported in Detroit during 1931. Of these twelve patients died. It is also apparent that ten of the 115 patients were resident outside of Detroit and came into the city for treatment. Two of these non-resident patients died in Detroit.

The words primary and secondary should be defined. When a case of typhoid appears in a family, if after a suitable incubation period a contact develops typhoid fever, the former case is called a primary case and the latter a secondary. A contact to a known

case, who develops typhoid fever, is called a secondary.

Table VI indicates the source of infection in and about Detroit.

The typhoid carriers found were interesting. One was a cook, a woman 38 years of age, who had typhoid fever in 1911. She had worked for a number of important families in Detroit during the last fifteen years. There had been no cases of typhoid fever traced to her before the one observed in the family of her employer this year. Another carrier was a man, 46 years of age, employed as a night watchman. He had typhoid fever in 1915. His grandson developed typhoid fever this year. The third typhoid fever carrier is a woman, 35 years of age, who had typhoid fever in 1911. The patient was the sixteen months' old daughter of this carrier.

The six primary cases infected while swimming had been in the Detroit river off the Detroit shore, where the water is known to be polluted by the Detroit sewers. Some of these patients had been swimming in the River Rouge, which is also badly polluted. These patients had been swimming in these places about two weeks before their illness began.

Those who drank infected water, did so unwittingly. One drank water from a high pressure fire main which comes from the Detroit river. The water was left over after being sprayed at a fire. Some of the cases obtained water from a hose used to carry water from the river to cool iron castings at a foundry. These are good examples to illustrate what Detroit is saved from by the filtration plant and the chlorination of the water. Detroit city water is excellent for drinking purposes, but the raw water is dangerous.

The next group of Detroit cases received their infection by association with the first case in the family. It is dangerous to have a case in the home, as evidenced by the nine cases who developed the disease from other cases in the homes. Three cases developed in hospitals. They were nurses caring for cases of typhoid fever.

The next and larger group obtained their infection outside of Detroit. There were forty such cases. Of these eight returned home from vacations having symptoms of typhoid fever. Six more returned home and soon developed typhoid fever. They learned afterward that the places where they had

been swimming were known to be condemned. Twenty drank polluted water. The natives never drank the water from this source, they used other sources. Then there were six who went to visit or help care for relatives who had typhoid fever in their home towns, and then developed the disease themselves.

The most important point brought out above is that eighteen cases obtained their infection in direct association with a case. It is safer not to visit a case of typhoid fever; wait until he has recovered. He will then enjoy a visit much better.

There were thirty-eight, or one-third of the cases, the source of which could not be determined. Included in this group are those who were boarding and had no relatives. Some of them died before detailed information could be obtained. The others were cases in which all forms of inquiries failed to reveal the source.

TYPHOID FEVER IN 1932

There were fifty-seven cases reported. Nine of these patients died. The source of infection was found in thirty-three, the probable source in eleven, and in thirteen the source could not be determined.

Of the thirty-three cases having a known source of infection, twenty-five were found to have been infected outside of Detroit. Of these outside sources three were infected while traveling, seven while swimming in infected waters, twelve through drinking water from polluted sources, and three were contacts with cases of typhoid fever in their homes. There were eight patients who received their infection while in Detroit, three from typhoid carriers, three from swimming in infected water, and two were contacts with cases of typhoid fever in their homes. One typhoid carrier was found during the year. Thirty-six of the thirty-seven patients were hospitalized.

TYPHOID FEVER IN 1933

There were forty-eight cases of typhoid fever in Detroit during 1933. Ten of these patients died. The source of infection was found in twenty-eight, the probable source in one, and in nineteen instances it was not possible to find a source.

Of the twenty-eight known sources of infection, twelve were found to be outside of Detroit, seven were infected while travel-

ing, three while swimming in infected waters, and two from drinking polluted water.

There were sixteen whose source of infection was found to be in Detroit. Eight were infected by typhoid carriers, one while swimming in infected water, and two from drinking polluted water. Five received their infection from contact with a case in the home. During the year six typhoid carriers were found. Thirty-four of the forty-eight cases were hospitalized.

During the year 1933 a special rule was adopted by the State Department of Health by which it is possible to reallocate cases of typhoid fever to the municipality from which they received their infection. This regulation reads as follows:

1. If the source of infection is indeterminable the case is allocated to the reporting jurisdiction, or, if the case is reported by more than one health officer, then to the jurisdiction which seems the more likely place of infection in the opinion of the Bureau of Communicable Diseases.

2. A case is reallocated to another jurisdiction provided that:

- a. The case was in that jurisdiction for all or most of the period from seven to twenty-one days previous to the onset, and that other epidemiological evidence is insufficient to warrant any other allocation; or
- b. The case has been traced to a source or mode in that jurisdiction; or
- c. The case is presumably an outbreak case in that jurisdiction, whether or not the source and/or mode are determined."

OUR DUTY TO THE PUBLIC

"What should be our attitude, for the public welfare and for our own sakes, with regard to irregular practitioners?" asks the editor of the *Pennsylvania Medical Journal*. "Undoubtedly the solution lies in the legislation restricting the practice of medicine to those properly qualified and such laws as are for the benefit of the public it is right to urge upon that public even though it be not wise enough to commend us. Were there no legislation restricting the milk supply, the people at large would be content to take any filthy stuff the milkman might bring, but, by putting before their more intelligent representatives the need of a pure milk supply, we virtually protect the people from themselves. If it be asserted that people have an inalienable right to use dirty milk if they so prefer and that our laws interfere with this privilege, still they do not possess such right in regard to the milk they shall give their children and it is clearly the duty of the law to guard the helpless from harm. It seems to us that this matter as well as many others of public hygiene in which the public is protected from itself and the helpless from the ignorant is paralleled by that of irregular practice. If we can teach legislatures that medicine should be practiced only by those qualified

On account of the above rule it was possible for the Detroit Department of Health to have fourteen patients reallocated from Detroit. It is felt that the above regulation of the State Department of Health is a very forward looking provision because it focuses attention upon the location where sources of infection have manifested themselves, and may be looked upon as possible sources in the future. This will stimulate local health authorities to correct the condition which makes possible the spread of typhoid fever in their municipality.

SUMMARY

1. A record has been given of the incidence of typhoid fever in Detroit from 1910 to 1933, inclusive.

2. It has been pointed out that the decrease in incidence has been due to improvements in the water supply, pasteurization of milk, extension of the sewer system, extension of the city water mains, the elimination of cross connections, the search for typhoid carriers, and the educational work regarding possible sources of infection when out of the city.

3. Intensive study of the source of infection of each case has been fruitful in pointing out important sources of infection.

by proper education, the question is at once solved. If a cultist desires to practice healing let him first study medicine, pass a State Board, then he may practice legally whatever system of the healing art seems to his clarified judgment the most efficient. That he might be guilty of devious methods is true but so might be, and occasionally are, physicians who yet have been regularly admitted to practice and cannot be debarred therefrom. But what such laws would do is to protect from the ignoramus, who with no knowledge of premises sets himself up to cure disease in some new fashion, not only the adult public, who perhaps should be allowed to attempt the descensus Averni in its own way, but the helpless children who have now to be sacrificed to whatever fad is uppermost in their parents' unbalanced minds. To educate the public and especially the lawmakers against such practitioners is not only our right but our duty; but it must be done sanely and with moderation, for even so our only reward will often be an accusation of professional jealousy. Misunderstanding should not deter us; the health of the people in many ways depends upon what physicians have done and are doing in the face of the bitterest opposition; and the measures that they have caused to be enacted and enforced have led to anything but selfish benefit."

HYPOTHYROIDISM AND CHOLELITHIASIS

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Search of the medical literature for the last several years has failed to reveal more than casual reference to a definite relation which, I believe, exists between some cases of cholelithiasis and hypothyroidism. In 1900 Hertough (quoted from Buttner) pointed out a possible relation; and Buttner describes a case which seems to bear out this theory. Rowe says that liver and gall bladder disease is from three to five times as common in thyroid as in pituitary disease and more than two times as common as in a typical group of non-endocrin complaints.

It is of more than passing interest that nearly all gallstones contain cholesterol; some indeed are composed almost entirely of this substance. Robinson says that the average cholesterol value is raised in the blood in cholelithiasis and Fowweather and Collinson report that these high values return to normal after cholecystectomy.

Cholesterol is a monatomic alcohol with a condensed formula of $C_{27}H_{43}OH$ and is structurally related to the bile acids. It is not easily soluble except in the presence of these acids. In the blood it forms a weak molecular union with saponaceous substances and glucosides which have a hemolytic action and so protects the red blood cells. In the cells it checks lipolytic action of some enzymes, conserving protoplasmic lipins. It also aids the cells to absorb more water without losing their semisolid state (Mathews). Cholesterol is distributed throughout the body both in the free state and as ester cholesterol.

It is probable that gall stones are not caused by any single condition or bodily state, but that many synergetic factors enter into their formation. Locally, infection and stasis, and constitutionally, metabolic disorders as pregnancy, obesity and endocrinopathies, cover the major etiology.

That infection is not the "sine qua non" of gallstone formation is well known to surgeons and pathologists, for both have seen the smooth, glistening, grossly normal bladder which, nevertheless, contains numerous faceted stones. When the mucosa of this type of gallbladder is examined, it often presents a striking appearance; the surface is

dark red in color with characteristic yellow dots, like a strawberry, from which it gets the name "strawberry gallbladder." Boyd speaks of gallbladders in this condition as "lipoid gallbladders." Others have written on this subject but his work represents the first detailed study of this type of cholelithiasis. In 1909, Monahan first called attention to this type of disturbance and Lichtwitz and Illingworth have made important contributions. Elman and Graham in 1931 reported their dog experiments. The latter two authors contradict the claim of the others that the gallbladder absorbs cholesterol and have shown that in dogs the gallbladder wall actually excretes this substance.

In the production of stones, without infection, the following changes should be considered. First, an increase in the amount of cholesterol in relation to the bile acids. This may be due to an increased hepatic elimination with an abnormal differential rate of absorption of the component parts of the bile, as Ashoff maintains; or it may be due to increased excretion of cholesterol by the gallbladder mucosa (Elman and Graham). Second, the supersaturated bile precipitates the cholesterol upon detached fragments of mucosa, the villi of which had become loaded with cholesterol and pedunculated (Boyd). Stasis, delayed emptying or incomplete emptying of the gallbladder are important factors, since the longer the bile remains in the viscus the more marked or complete these changes can become. Prolonged stasis by itself, however, will not cause stones (Goff, Hrdina and Andrews—University of Chicago).

Hypercholesterolemia is found in states other than hypothyroidism and it is interesting to see what various authors have noted in these conditions. In diabetes, the cholesterol value of the blood is raised and gall-

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stones are common, according to Aub. Overeating or fasting with restriction of fluids may induce gallstones is a conclusion of L. A. Whittaker. In nephrosis there is often a marked hypercholesterolemia but there are no reports of an increased incidence of gallstones in these cases. This may be due to the absence of any disturbance in the tone or motility of the gallbladder. Pregnancy is often accompanied by an increase of blood cholesterol, due to an increase of female sex hormone or often to a thyroid insufficiency. The altered mechanical condition of the abdomen from the enlarged uterus disturbs the function of the gallbladder. Gallstones are common (Fowweather and Collinson). In a review of their cases the Mayo Clinic reports that a significant number of their women patients date the onset of their cholelithiasis to a certain pregnancy.

Races subject to gallstones have more cholesterol in their diet than others, according to Dr. Langer (quoted from H. G. Wells). Peterson, in the *Archives of Pathology*, comes to the defense of the aphorism that gallstones are found most often in the broad type of person with an obtuse subcostal angle. He says that hypercholesterolemia is found in the "heavy type," having the general biologic status of diminished tissue permeability, lower metabolic rate, more sluggish inflammatory reactions of the presumably hypothyroid, hyperpituitary and hyperadrenal groups.

In hypothyroidism the concomitant hypercholesterolemia has been noted by many authors. This does not bear a direct relation to the basal metabolic rate but is found in all profound cases, as in myxedema. Dr. Frank Lahey is of the opinion that thyroid medication does the most good in those patients in whom this change is most marked (over 200 mg.). Dr. T. R. Brown in studying hypothyroidism and its effect on gastrointestinal function says, patients with a B. M. R. of —20 or lower have a marked tendency to intractable constipation, low gastric acidity and delayed intestinal conduction or conveyance.

Onizawa in Tokio, from his experimental work, reports that thyroid depletion causes an increase of ester cholesterol in most tissues and a decrease of free cholesterol, ex-

cept in the kidneys, liver and spleen, where the opposite effect is found. In the total blood and blood plasma both the free and ester cholesterol are increased. He concludes that thyroid acts in forming free cholesterol from the ester, probably in the liver.

Englebach, in discussing hypothyroidism in the adult, says that there is decreased reactivity of both the central and vegetative nervous systems; that there is a decreased exchange of fluids, crystalloids and colloids, and increased retention of water and proteins in the tissues; and that there is a decrease of tone and energy in the gastro-intestinal musculature. Furthermore, in writing on the adipose types of thyroidism and pituitarism, he says, "an additional lithiasis of these sacs (gallbladder and renal pelvis) occurs. Their operative removal does not prevent their recurrence, as has been shown in many cases. Preventive treatment, therefore, should go much farther, to the removal of the underlying biochemical cause, which might be corrected."

It is not to be wondered at that this relation has not been more frequently reported, when one considers how seldom is the diagnosis of hypothyroidism noted, especially in cases as spectacular as gallstones. Casting back in the mind we can all remember cases of gallstones which present, in retrospect, the clinical picture of hypothyroidism. This is especially true of women whose thyroid is so apt to become depleted during pregnancy and at the menopause, the time when gallstones so often occur.

In conclusion, there is a great need of studying the thyroid function in gallstone cases with an idea of preventing recurrence of the lithiasis by adequate control of hypothyroidism.

BIBLIOGRAPHY

- Duncan: Blood cholesterol. Effect of thyroid administration. *Jour. Med. Sci.*, 77:332-40 (April), 1931.
 Andrews, et al: Bile cholesterol, etiology of gallstones; bile salt cholesterol ratio in human gallstone cases. *Proc. Soc. Exper. Biol. and Med.*, 28:944, 947, 1070 (June), 1931.
 Fowweather and Collinson: Reabsorption of cholesterol by gallbladder is cause of hypercholesterolemia. *Brit. Jour. Brist.*, 27: 14:529, 1926.
 Boyd, W.: Studies in gallbladder pathology. *Brit. Jour. Surg.*, 10:337, 1923.
 Aschoff, L.: Lectures on pathology, Paul B. Hoeber, New York, 1924, pp. 212-214.
 Elman: Pathogenesis of strawberry gallbladder (cholesterosis). *Arch. Surg.*, 24:14-22 (January), 1932.
 Whittaker, L.: Bile stasis as a factor in the production of gallstones. *Surg., Gynec. and Obstet.*, 48:396 (March), 1929.
 Illingworth: Gallbladder-cholesterosis: Clinical and experimental study. *Brit. Jour. Surg.*, 17:203-29 (October), 1929.

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EDITORIAL

MUTUAL HEALTH SERVICE

The greater portion of this number of this JOURNAL is given over to the reports of the special committee on economics of the Michigan State Medical Society, the report of the special delegation to England last January and February and the deliberations of the special meeting of the House of Delegates, which assembled at Flint, April 12.† It is hoped these reports will be read and thoroughly digested by each member of the State Medical Society. The House of Delegates adopted the report of the Committee of Economics by a vote of 61 to 9, making the following recommendations:

(1) Approval for discussion of the plan with employers and employees. (2) Approval of an action to determine the legal status of the Mutual Health Service and the necessary action for the organization of Mutual Health Service. (3) Approval of the preparation of a final detailed plan of the Mutual Health Service for presentation to the House of Delegates for final action.

Health insurance, according to the report of Drs. Luce and Sinai, was favored almost universally by the medical profession in England and Scotland. The main objection was the association of insurance against illness with unemployment insurance. Taking a lesson from England's experience, the Committee on Economics has dealt only with the matter of health insurance which they have designated Mutual Health Service. Details of the plan are fully presented

†See supplement to this number.

in the report and the discussions. The fact is emphasized that the plan is tentative or experimental and that it will be voluntary to the counties adopting it by a majority vote of the members of the County Medical Society.

The Mutual Health plan is a sort of contract, the parties to which are the worker or wage earner, the employer and the medical profession. THE JOURNAL OF THE MICHIGAN STATE MEDICAL SOCIETY has from time to time dwelt upon what appears to be a fact; namely, that we are on the threshold of a new era in medicine as we are socially and industrially. What plan have we for the future? That question has been answered by the adoption of the aforementioned report. The new epoch is not of our making, nor is it due to any special desire on the part of anyone. We are confronted by a situation, and with the lesson of other states or countries before us we anticipate the future and are doing our best to avoid meeting it unprepared.

Even with the adoption of the recommendations of the Committee on Economics we have only a beginning. There will be obstacles to overcome. Explanation and publicity will be necessary. In the process of the initial experiment changes doubtless will be called for to meet unforeseen situations. However, the members of the medical profession cannot be charged with the accusation of having no definite plan to offer.

The problem is now up to them. No irrevocable action has been taken by the House of Delegates.

THE BEAUMONT LECTURE

The thirteenth annual Beaumont Lectures before the Wayne County Medical Society, which are appearing in the April and May issues of this JOURNAL, made a profound impression upon most of those who attended. Of equal or more importance to the medical man than the horizons opened by the new material of the lectures were certain implications which could be drawn from Professor Fulton's talks.

To most physicians, the cerebral cortex has been a portion of the brain surface which has been marked into areas associated with definite sensory, motor and associative functions and into a still larger "unknown" area. Since physiology has

been slow in unraveling the mysteries of "unknown" areas, there has been some tendency to look upon the areas as "unknowable." Although the work of Professor Fulton on frontal lobe localization has dispelled this view, it has likewise shown how dependent physicians are upon professional physiologists. The scientific man presents his conclusions in monographs and textbooks, repositories which for the physician are the known and knowable until other conclusions are available. The grist for the scientist is nature; the source of physiological knowledge for the physician is the textbook, the monograph and the lecture.

Professor Fulton casually called attention in his talks to the value of the old and often forgotten observations which at the time of their recording could not have been correlated with the bulk of physiological knowledge. Frequently, such records when critically reviewed in the light of newer knowledge have been important contributions to physiology. In this sense, accurate case records and the observations of practicing physicians have been valuable to physiologists either in providing data to aid in generalizations or in presenting problems to be solved.

In much of his work, Professor Fulton combined certain techniques of the experimental psychologist with the standard physiological procedure. His records were made through motion pictures to allow comparison of the behavior of his experimental animals. How much more delicate is such a method than the ordinary kymograph records of physiology. It is by such adaptation of method to the problem investigated that physiology is advanced. The insight into experimental method which the lectures presented was a glimpse into the nature of science.

Finally, it may be pointed out that for a long time the frontal cortex has been known to be subdivided into areas of differing histological structure. In determining the function of the frontal area, the physiologist is correlating function with form. Where the structure of the cortex varies, a different type of function may be expected. The broad biological background which correlates anatomy and physiology in attaining a viewpoint of the organism was evident in Professor Fulton's presentation.

Thus, we see that, in addition to show-

ing that the frontal lobe is subdivided into areas associated with the autonomic control of intestinal, vasomotor and thermal response, with the physiology of individuated and coördinated movement and with the physiology of memory, Professor Fulton has given an insight into the methods and viewpoint of physiological research.

WORK AS A THERAPEUTIC MEASURE

There is an organization in England which goes under the somewhat cumbersome name, Save the Children International Union. Under the auspices of this society a pamphlet has been issued which presents conclusions of an investigation of the results of unemployment on young persons. Information was supplied from fourteen different countries. An immense number of boys and girls, we are reminded, come of age without ever having had any opportunity for work. In thousands of instances the young unemployed gradually manage to exist on one meal a day. The result is mental deterioration as manifest in apathy, carelessness in personal cleanliness and health; the majority become apathetic and listless. Those with most vitality and energy the minority, go to swell the ranks of radicals in open revolt against society.

Unemployment has the effect upon the young as a sentence of imprisonment, in as much as it condemns them to inactivity at a time of life when all physical and mental energies clamor for outlet. The seriousness of the situation manifests itself when we consider that unemployment of the young after they leave school means the elimination of that constructive force which should be each generation's contribution to human society.

The report further says that the attempt to attract the older boys and girls to study centers has not been successful on account of the apathy and indifference which prevails. It concludes:

"Labor service seems to be the only reasonable and feasible measure, and several contributors of our inquiry insist on the superiority of voluntary to compulsory service.

"The conclusions we are inclined to draw from the varied data is that much depends on the moment at which rescue work begins. Labor service schemes are mostly established for youngsters of an age when they are likely to become a social menace as beggars or vagabonds and when their demoralization under protracted spells of inactivity is almost complete. Were it possible to extend voluntary

labor service to school-leavers, so as to reach them before the work of deterioration begins, their acquiescence could be easily obtained and the system would not only prevent them from going under but give them a real education in citizenship.

"Whilst families may be helped with doles, allocations, school service, and other forms of relief, for the adolescent and young person there is but one means of assistance—work. Doles cannot arrest their gradual decline."

No nation is free from the menace of unemployment. We have it in the United States; in fact in every city, town and village in our own state. Before the urbanization of our population, the routine work of farm life absorbed the surplus energies of young men and women, when there was no unemployment problem, as most of us who have passed the half century mark well know. Not only are the young in our larger industrial cities suffering, but the tendency on the part of industry to discard thousands who are in the prime of life, but who have passed a certain arbitrary age limit, is producing a certain mental deterioration in a class who are still expected to bear all the responsibilities of citizenship.

Robert Burns, the poet, sensed the labor condition nearly a century ago:

"See yonder poor, o'er labored wight,
So abject, mean, and vile,
Who begs a brother of the earth
To give him leave to toil;
And see his lordly fellow worm
The poor petition spurn,
Unmindful though a weeping wife
And helpless offspring mourn.

If I'm designed your lordship's slave—
By nature's law designed—
Why was an independent wish
E'er planted in my mind?
If not, why am I subject to
His cruelty and scorn?
Or why has man the will and power
To make his fellow mourn?"

What to the present time has been a social problem is fast becoming a medical problem, particularly one for the psychiatrist.

POST-GRADUATE OPPORTUNITIES

The necessity for post-graduate work in medicine and surgery and allied specialties is greater today than in the past because more is expected of the physician. To meet this need the Post-Graduate Department in Medicine and Surgery of the University of Michigan, with the Michigan State Medical Society, has devised courses of the most practical nature. Each year more and more members of the society have availed themselves of the opportunity for self-improve-

ment. Efforts have been made to provide short intensive courses on various subjects. The brevity of these courses makes it possible for physicians to attend with very little interruption of the routine of their practice. The instructors present the established facts and methods in diagnosis and therapeutics in succinct form. A good example of such program was printed in the April number of the JOURNAL OF THE MICHIGAN STATE MEDICAL SOCIETY in which four days of concentrated instruction were given at the University on Ophthalmology and Otolaryngology, the courses continuing from 9 a. m. to 8 p. m. What an opportunity for those interested in these subjects, even for the specialist to meet and discuss problems of his specialty! Approximately seven hundred members of the profession each year take advantage of these and similar courses. This, however, is not enough. The number includes less than twenty per cent of the physicians registered in the State. True, the past four years, the economic problem has been most acute and there has been a disposition for members of the medical profession to keep pretty close to their offices and their practice. However, there is a limit beyond which it is not to the advantage of physicians to do this. They cannot perform their duty to their patients if they do not keep abreast with the advances made in the medical knowledge.

Programs of post-graduate instruction appear in this JOURNAL from time to time; the wise physician or surgeon will so arrange his work that he may take advantage of these courses.

HUMAN DISSECTIONS*

Although human dissection had been performed during the time of Herophilus and Erasistratus in Alexandria, the story of cadavers and their dissection dates more correctly from the thirteenth century. When Italian physicians began to supplement their textbooks and animal dissections with occasional glimpses into the human body, the value of anatomy began to be appreciated. The importance of anatomy for medical students was recognized at Salernum as early as 1240 in an order of Frederick II requir-

*This historical editorial is one of the series appearing in this JOURNAL on the general subject of the evolution of methods and devices that have aided in the growth of Medicine and Surgery.

ing that medical men must have learned the anatomy of the human body at the medical school before performing surgical operations.

The earliest record pertaining specifically to human dissection concerned a legal autopsy made by the Bolognese surgeon, William of Saliceto, before 1280, to detect whether or not a man had been poisoned. A Lombard physician is also reported to have made autopsies of persons who had died of pestilence in 1286. During the later thirteenth and early fourteenth centuries, occasional dissections were made, and it was at this time that the anatomies of Mondino, de Mondeville and da Varignano were written. Annual dissections were scheduled in 1340 for the physicians and surgeons of Montpellier, and, within a few decades, dissections were made at Venice, Lerida, Vienna and Paris. The city of Bologna after 1442 granted to the university a male and female cadaver for annual dissection. Sometimes, the apathy of the authorities who provided the material interfered with the dissection schedule, and frequently teachers and physicians were forced to insist upon their rights lest the custom die out. Such petitioning of authority was required at Montpellier in 1376, 1377 and 1396, as well as in the following century. The difficulty of obtaining material is attested by the record of a trial in Bologna in 1319 of four masters who were accused of removing the body of an executed criminal from its grave.

During the early period of dissection, when preservation was unknown beyond the external application of incense and sweet-smelling oils, the rapid decomposition of a body in the warm Italian climate necessitated a hurried dissection. Not more than four days could be allowed, and the order of dissection (abdomen, thorax, head and extremities) was determined by the order of decomposition of the parts. The rarity of dissection and the paucity of material, together with the current pedagogical practice of teaching from ancient, medical books, tended to make a dissection an occasion for the display of erudition, rather than for investigation. The professor read his textbook to an aggregate of physicians and students, while an assistant outlined the incisions and dissection procedure for a servant, who actually handled the body. Occasional preparations were made by drying the

parts in the sun or after long maceration in water. Bones might be cleaned by boiling or burial.

Essentially the same procedures obtained until the latter part of the fifteenth century when the renaissance artists invaded the demonstration room and charnel house in their search for more accurate information on the muscles and shapes of the human body. These men, less affected by the traditions of ancient anatomy than were the physicians, frequently dissected for themselves. Dürer, Michelangelo and Leonardo followed this practice.

By the middle of the sixteenth century, professional anatomists, such as Vesalius, Fabricius and Columbus, broke from tradition and began to dissect cadavers themselves. When it became evident that much might be learned from dissection, the importance of cadavers increased, but popular prejudice opposed the dismemberment of the dead so strenuously that cadavers were as difficult to procure as formerly. Vesalius, in order to secure sufficient material, had to rob the gallows; Rondelet even dissected his dead son. Dissection material was so scarce at Frankfort-am-Main that dissections were performed during but eight years out of the whole seventeenth century. Cortessi of Messina obtained only two criminal cadavers in twenty-four years. Rolfink at Jena was able to make annual dissections (after 1629) only by robbing graves. In twenty-four years, Hoffman, for a time an important opponent of Harvey, was able to dissect only twenty bodies. During the twenty years preceding 1712 in Prague, only three dissections were made. Cadavers were hard to obtain at Leyden, Tübingen and Vienna, and even the most outstanding anatomists studied and taught from miserable and inadequate material. A dearth of dissecting material was the natural consequence of the stigma attached to criminal cadavers which were generally considered as little more than carrion. Despite the despicable character of the cadaver which aroused general prejudice and affected the availability of material, there was no lack of interest when a body was scheduled for dissection.

During the seventeenth, and in fact into the eighteenth, century, demonstrations were attended by civic dignitaries and the nobility, as well as by physicians and students. Frequently, the demonstrations assumed the characteristics of a festival, in

which the dissection was a ceremony, accompanied by ritual, entertainment and even music. It was during this same period that dissecting chambers began to be outfitted with skeletons, stuffed animals and dried anatomical preparations which later were to lead to the anatomical museum.

As critical dissections were more intensely pursued, new dissecting techniques appeared. The injection of tubular organs, blood vessels and lymphatics with colored fluids to determine the continuity of tubular systems became a common procedure. When mixtures of colored waxes were passed into the vessels, it was noticed that bodies did not putrefy as readily as when untreated. In 1666, at the behest of the Dutch government, the anatomist Ruysch injected the body of the English admiral, Berkeley, who had been killed in action, in order that the body might be interred at home. Johannes Jacob Rau (1668-1719) of Leyden injected bodies in his laboratory to keep them from putrefying. Monro and Cassebohm standardized injection methods by injecting a thin colored turpentine into the vessels followed by a waxy medium. This method, crude as it was, persisted in the anatomical schools for a hundred years. The injections did not actually prevent putrefaction, but rather delayed it, and thus the dissecting rooms were characterized by the reeking stench of decomposing bodies. The septic condition of anatomical rooms was frequently reflected in the health of anatomists. Adrianus Spigelius of Padua, who died in 1625, was the first outstanding anatomist to die from a dissecting injury, and four anatomists who died of a putrid miasma are referred to by Jesse Foot, John Hunter's biographer.

Conditions at the beginning of the nineteenth century are described in Tuson's dissecting manual, according to which the dissection was carried on in a fireless room with windows open to the winter cold. The student was advised to dress warmly and to watch his diet in order to avoid the possible effects of bad air. "The food should be nutritious and generous, and it is proper to take a small quantity of wine, at a time when the body and mind is debilitated by long sitting at lectures and dissections; but avoid all excess of fluids and solids. Temperance is strictly necessary." The student was further advised to avoid wounds or pricks, and to suck the injured part if the

skin were abraided. Horner's *Dissector* noted that when the parts were exposed, they either dried or putrefied rapidly so that it was unwise to skin more of the body than was necessary to expose the parts studied. This applied to bodies injected with the colored wax method which had been used since the time of Ruysch. Although arsenic, alcohol, corrosive sublimate and alum were known to anatomists, these substances on the whole were used only in the museum, rather than in the dissecting room. Sometimes, mixtures of salt, potassium nitrate, sodium carbonate, molasses, starch and water, which would preserve the body for as long as two months in winter, when injected into the arteries, were used. Gannal in France by the use of alum, arsenic, creosote and numerous other substances perfected embalming methods so that the practice of embalming became more widespread. After the demonstration of the bacterial nature of putrefaction, antiseptics were added to the emblaming fluids. The addition of glycerine or hygroscopic salts to the embalming fluids obviated the necessity of storing the embalmed bodies in solutions of brine or preserving fluids. The introduction of formaldehyde solutions by J. and F. Blum in 1893 was an outstanding contribution to the preservation of bodies, and, at present, the combination of formaldehyde with antiseptics, such as phenol, is probably the most common method of preservation. Although bodies are now rendered antiseptic and not likely to putrefy, the treatment is still not ideal, since it destroys the natural color of structures and hardens them.

Until the innovation at Berlin and Strassburg early in the eighteenth century of student dissection, the demonstration method was the recognized plan for teaching anatomy. This was the method of William Hunter, of the first Monro and of Albinus in Europe; of Cadwallader, of Bard and of Middleton in America. Often, the same specimens preserved in spirits or dried were shown to a score of classes. Toward the close of the eighteenth century, the competition among the private schools and universities led to the widespread establishment of student dissection, and the anatomist who could not furnish his students with a well supplied table suffered loss of students as well as loss of reputation. Under such a system, the bodies of executed criminals were inadequate. This fact, coupled with

the inconvenience of applying for them, resulted in the widespread development of irregular methods. Grave-robbing had been practiced since the renaissance period, but only in a desultory fashion. By the last decades of the eighteenth century, a somewhat enlightened authority in Germany, Austria and France provided sufficient dissecting material, but in the British Isles and America there was no such provision.

The practice of body-snatching, though providing material, had many undesirable features, particularly after professional grave-robbers arose in the field. As early as 1721 and 1722, the College of Surgeons expressed its disapproval of this practice. Public opinion bitterly condemned the desecration of graves, and, even among criminals, the prospect of dissection was more dreaded than that of death on the gallows. In Edinburgh and in London, demonstrators in anatomy, medical students and professional body-snatchers provided bodies for the schools. The actual stealing of a dead body was not larceny, because a corpse is not property according to English law; therefore, body-snatching, except for the trespass on cemetery property and the stealing of property within the grave, was only a misdemeanor. So common was the practice of grave-robbing that it was often the custom for towns to hire guards to watch the cemeteries during the night. The disapproval of grave-robbing expressed itself in the Glasgow Riot of 1813 which resulted in the jailing of the anatomy professor and his assistants, who, however, were later acquitted. The increase in the number of medical students and the difficulties of obtaining an adequate supply of dissecting material caused an increased demand for bodies, so that the professional body-snatcher or resurrectionist became a regrettable, but essential, adjunct to anatomical study. These were frequently despised characters to whom betrayal or blackmail was not unusual. Occasionally, bodies were even stolen from one dissecting room to be resold at a neighboring medical school. As the demand increased, the price of bodies rose from a few dollars to as much as a hundred dollars. Cadavers were frequently shipped into England or Scotland from neighboring countries, especially Ireland, a practice which precipitated scandal when rotting corpses failed to reach their destination. Dr. MacCartney of Trinity Col-

lege tried to induce certain of his friends to will their bodies in lieu of burial with a view of decreasing the necessity for body-snatching. Although this scheme had little support, some few, including the political philosopher, Jeremy Bentham, became anatomical subjects. In 1828, the police of London estimated that there were a hundred professional resurrectionists at work in the city. A rather extensive literature on the activities of these men, as well as students who indulged in the practice, is available to those enjoying gruesome, but exciting, literature, Dickens, Stevenson, Scott, De Quincey, Southey and Mark Twain, among others, have left writings which voice the prevailing opinions of their times. The poem by Thomas Hood, in which the spirit of a dead girl talks to her lover, is typical:

I thought the last of all my cares
Would end with my last minute;
But though I went to my long home,
I didn't long stay in it.

The body-snatchers they have come,
And made a snatch at me;
It's very hard them kind of men
Won't let a body be!

You thought that I was buried deep,
Quite decent like and chary,
But from her grave in Mary-bone,
They've come and boned your Mary.

The objections of the public to body-snatching and the statements of unwillingly involved anatomists during the early part of the nineteenth century were supplemented by articles in the *Lancet* demanding legal sources of dissecting material. It was not, however, until public opinion was excited by the Burke and Hare atrocities at Edinburgh that legislative authorities were moved to action. The trial of Burke and Hare, in 1828, revealed that sixteen persons had been lured to the rooms of these men, intoxicated, and then suffocated. The bodies of the victims had then been sold for dissecting purposes, principally to Robert Knox, who at that time had the largest anatomy classes in Europe, numbering over five hundred. Public feeling was so outraged in Edinburgh that mobs collected and burned the dissecting room of Robert Knox to the ground. Within a few months, a bill was introduced in the House of Commons empowering the overseers of the poor to give up bodies to the medical schools, if no relatives could be found to pay burial expenses. Believing that such a bill dis-

criminated against the poor, the House of Lords vetoed the measure, and it was not until other murders occurred in London in 1831 that Parliament passed the Warburton Act (August 1, 1832), which gave anatomists authority to receive and dissect bodies upon application to the Secretary of State.

In America, where the anatomical teaching was closely patterned after the English and Scotch systems, grave-robbing was practiced by medical students and young doctors, although, as in England, occasional executed criminals were given to the medical schools. Public sentiment against body-snatching in New York became so aroused in 1788 that the Doctors' Riot was precipitated. Several persons were killed in the mob which surrounded the jail where the doctors had taken refuge. At Baltimore, in the same year, the body of a criminal, intended for dissection, was taken from the doctors by an inflamed mob. In 1789, the New York legislature passed an act punishing grave-robbing and the dissection of material knowingly so obtained. The act further added dissection to the death penalty in certain instances. Massachusetts since 1774, had punished duelling by death followed by dissection. The first true anatomical act in the country, however, appeared in Massachusetts in 1831 and permitted anatomists to use the bodies of deceased persons which would, otherwise, be buried at state expense. Within the next two decades, several states, a few of them only temporarily, passed similar anatomical acts. Fifty years after the enactment of the Massachusetts law, twenty-four states had passed acts of varying degrees of liberality, while fourteen still had no such laws. The earlier laws permitted dissection and provided legal means by which the anatomist could apply for material. A few years after the Civil War, several states, such as Michigan, New York, Pennsylvania and Ohio, had either passed new laws or amended old ones, making it mandatory that all bodies for which the state was responsible be sent to the medical schools. During the past fifty years, a number of other states have passed mandatory types of laws. The change in attitude from the earlier legislation in which anatomists were permitted to ask for bodies to a state in which all the bodies, not otherwise claimed, were given into the custody of the medical schools was a distinct advance. Such laws not only discouraged

grave-robbing and the evils arising from it, but also provided adequate material for the anatomist and gave him legal protection.

The history of dissection reveals an interesting fact. The main outlines of human anatomy were described from rare and unpreserved corpses before the time of Harvey; the details were gained during the seventeenth and eighteenth centuries from stolen bodies; while today, with an abundance of antiseptic and non-putrefying material, nothing remains for the practical anatomist but the study of minute details of human variation.

W. T. D.

EARLY RISING

"God bless the man who first invented sleep!"

So Sancho Panza said, and so say I:
And bless him also, that he didn't keep

His great discovery to himself; nor try
To make it—as the lucky fellow might—
A close monopoly by patent-right.

Yes—bless the man who first invented sleep

(I really can't avoid the iteration),
But blast the man, with curses loud and deep,
Whate'er the rascal's name, or age, or station,
Who first invented, and went around advising,
That artificial cut-off, early rising.

"Rise with the lark, and with the lark to bed,"

Observes some solemn, sentimental owl;
Maxims like these are very cheaply said;

But, ere you make yourself a fool or fowl,
Pray just inquire about his rise and fall,
And whether larks have any beds at all.

The time for honest folks to be a-bed
Is in the morning, if I reason right;
And he who cannot keep his precious head
Upon his pillow till it's fairly light,
And so enjoy his forty morning winks,
Is up to knavery—or else he drinks!

Thompson, who sung about the "seasons," said,

It was a glorious thing to rise in season;
But then he said it lying in his bed,
At ten o'clock A. M.—the very reason
He wrote so charmingly. The simple fact is,
His preaching wasn't sanctioned by his practise.

'Tis doubtless well to be sometimes awake,

Awake to duty, and awake to truth,
But when, alas! a nice review we take
Of our best deeds and days, we find, in sooth,
The hours that leave the slightest cause to weep
Are those we passed in childhood or asleep!

'Tis beautiful to leave the world awhile

For the soft visions of the gentle night;
And free, at last, from mortal care or guile.
To live as only in the angels' sight,
In sleep's sweet realm so cosily shut in,
Where, at the worst, we only dream of sin.

So let us sleep, and give the Maker praise.

I like the lad who, when his father thought
To clip his morning nap by hackneyed phrase
Of vagrant worm by early songster caught,
Cried, "Served him right! It's not at all surprising.
The worm was punished, sir, for early rising."

By JOHN G. SAXE (1816-1887).

THE DOCTOR'S CONTRIBUTION

(The Detroit News)

Appreciation of the services of the medical profession grows. The doctor has had a big share in the advance of science that has lengthened the average life and made life for everybody more worth living.

Particularly in times of depression, the physician is a staunch defender. It is a fine credit to the medical profession that it has stood ready to serve and has placed the estimate of its responsibility to relieve suffering above the expectation of returns in fees.

How heavy has been the sacrifice made by the physicians of the country lately has been revealed through a survey conducted by the magazine, *Medical Economics*. Says an article in the current number: "As his contribution to charity, the average American doctor works one day out of every four for nothing. Furthermore, under present economic conditions, he is unable to collect for another quarter of his working hours. Thus half of the physician's time is devoted to free work, the grand total reaching more than \$1,000,000 a day."

Such information should stir the consciences of a great many people. Those who find themselves in better circumstances with the improvement of conditions, should take thought of their unpaid obligations. The doctor is worthy of his hire, and his huge burden of "involuntary charities" should be lightened.

GROWING AULD GRACEFULLY

Gracefully growing a' over th' years,
Way up tae th' three score an' ten;
Up tae th' time when th' auld gray appears,
An' somber auld dreams come tae men.

Don't let th' stress an' th' strife sae tae you
That a' o' yer livin' is gone,
Cling tae th' silver that's shinin' a' through
Th' clouds o' distress i' th' dawn.

Don't be a grouch, it gets under th' skin
O' neebors an' frien's wha come ben.
Yer crabbet an' creak when hate enters in
An' th' smile leaves th' soul o' men.

There's smiles up in Heav'n, th' earth's fu' o'
smiles,
There's oceans o' smiles on th' wend;
Get awa frae yersel' an' live in thae smiles
An' gracefully grow tae th' end.

WEELUM.

TREATMENT OF MYASTHENIA GRAVIS
WITH GLYCINE AND EPHEDRINE

Boothby† states that, of twelve patients suffering from myasthenia gravis treated with ephedrine and glycine, ten have shown definite improvement, and four of these have shown marked improvement. Two did not respond to treatment except that the progress of the disease was apparently arrested; one of the two died from causes not directly attributable to the myasthenic syndrome. The author believes that by the careful use of either ephedrine or glycine, and more often of the two, the condition of most patients having myasthenia gravis can be improved sufficiently to permit them to return to work or at least to enjoy a useful life. Time alone will tell whether this improvement can be maintained. The disease occurs much more frequently than is generally supposed.

†*Archives of Internal Medicine.*

SOCIETY ACTIVITY

BEWARE OF GROUP HOSPITAL
INSURANCE PLANS

Considerable publicity has been given to the providing of hospital care under the so-called group insurance plan. Its adoption by communities has been sponsored and inspired by lay groups and at times by County Medical units.

Warning is given not because of the providing of hospital care but for the reason that following a period of successful operation, additional features will be demanded and incorporated. These features are those of professional services.

Many of the present medical problems had their inception in innocent proposals. There is abundance of evidence that, as time went by, medical service features were added, resulting in providing free medical care. While the group hospital plan states that it is to provide only hospital services, who can tell how soon the addition of professional services will be demanded? Once established under lay and hospital control with no or only a minority medical representation on the governing body, it would not be difficult to expand the benefits to include medical care and control to be vested in lay administration.

The plan of Mutual Health Services, published in this issue, provides for hospital, nursing, dental, and medical services. If Mutual Health Services is finally approved and the experiment inaugurated, the patient's hospital needs will be met. Pending this experiment, the warning is given to beware of group hospital plans and to not confuse the problem while our experiment is being made. We have sat by and seen too many innocent projects instituted that later developed into vicious movements, to our great regret. Do not permit group hospital care plans to become one more of these undesirable projects unless it is under absolute professional control.

CHEAP EXAMINATIONS

Scarcely a month passes without the receipt of a half dozen letters from members complaining of fees fixed by insurance com-

panies and chain stores for services and physical examinations.

Certain insurance companies seem to insist on a three dollar fee for office examinations for life insurance. Chain stores fix a fee of one dollar for an employee's examination.

As long as doctors will make examinations for these low fees these companies will decline to pay more. The answer has been given by the St. Clair and Bay County Medical Societies in an official action declining to accept these cheap fees. If similar action is recorded by every county unit the problem will be solved.

POST-GRADUATE OPPORTUNITIES

In the April and this issue of *THE JOURNAL* announcements are made of post-graduate opportunities provided for members by the Department of Graduate Medicine of our University in coöperation with our State Society. Members are urged to embrace these provisions that are arranged for their benefit. Write to the Director of Department of Post-Graduate Medicine, University, for specific information.

MUTUAL HEALTH SERVICES

By action recorded in the special meeting of our House of Delegates held on April 12, 1934, the plan for Mutual Health Services proposed by our Committee on Economics was approved in principle. Its experimental application was authorized.

The minutes of that Special Session, the Committee's Report and the detailed outline of the plan are published in this issue. Every member should study this new proposal. It ushers in a new era in medicine in Michigan.

OUR POST-GRADUATE PROGRAM

Dean Brett (University of Toronto) . . . "Of course, he (the practitioner) has his literature, but from all I have heard it is a problem for him to keep abreast of this."

Dean Edsall (Harvard Medical School) . . . "I think the point you mention is probably the most important point with regard to medical education that we have before us. . . . When the practitioner gets cut loose from an educational center he finds difficulty in keeping reasonably in contact with the new developments. He cannot under present conditions keep pace with what is happening although he earnestly desires to do so." (Report Annual Meeting, Association of American Universities, 1932, p. 148.)

The products of research and invention have added greatly to the safety of our people

and made their lives more interesting and livable. Labor saving devices on farm and in factory; the radio, with both entertainment and education, and the automobile, widening the scope of interest and opportunity, all have been very important factors in our national life.

It is interesting to note that new commercial products—the results of research and invention in their respective fields—reach the consumer very speedily and directly while the products of research and invention in the field of medical science are not made available to any considerable number of our people for many years, and many remedies and procedures of real importance never become available to more than a favored few.

While inability to purchase medical service is in a considerable measure responsible, the most important factor is that the only medium between supply and demand in Medicine—the doctor—is handicapped in the delivery of service. This lag in medical service continues to present a problem baffling alike to both educator and doctor, and is one in which the public is deeply concerned.

The Michigan State Medical Society was among the first of the state societies to assume responsibility in this very important field of education. The consistency with which this program has gone forward forms an interesting chapter in the history of our Society.

The entrance of the University into this effort and the enlistment of support from the Detroit College of Medicine were at the request of the Society upon its realization that more prolonged and more academically arranged opportunities must become a part of the program.

The arrangement for the current year is by far our most attractive presentation. The subject matter has been carefully selected and we consider ourselves very fortunate in securing the services of our teaching group.

Aside from, or supplemental to, these courses, provision is made for those with special problems. The Director, or the Chairman of the Committee in Detroit, would be glad to consider your problem with you.

DUES

Unless you have paid your 1934 dues you are now in suspension and without medico-legal protection. See your County Secretary to secure reinstatement.

ECONOMIC MOVEMENTS

The preventing of the institution of undesirable health services and plans will not be accomplished by merely declaiming against them. Earnest study and presentation of measures that are understandable by laymen is the only course that will defeat undesirable proposals.

We are being criticized by laymen and legislators because our attitude and action has, in the past and in the main, been characterized by condemnations and obstructive measures. We object but fail to advance a plan or plans that will be acceptable to the public and the profession. The public's conclusion is that we are incapable of presenting a solution to the demands of society. By inaction we have inspired laymen to attempt solution. These lay attempts are growing in number and in variety. These laymen or these lay controlled foundations will be successful in promoting plans unless organized medicine abandons its present attitude and devotes aggressive, intense efforts towards solving the problem by advancing an acceptable plan for Mutual Health Services.

We are proud of the fact that in Michigan the profession has taken the initiative and is on the eve of instituting a plan under the profession's control. The claim is not made that our plan is perfect or that it is the final answer. It is an experiment which we trust will aid us to formulate a satisfactory solution of the desires of society as to medical services.

Our members are urged to subscribe sympathetic support and aid in the experiment. Objectionable features may be uncovered—if so, our experiences will cause their correction because our medical representatives control and direct the experiment.

Unless we initiate this experiment and study we shall be practically defenseless in preventing the introduction of lay conceived and lay directed plans and operation. Our eventually perfected plan and its medically supervised control and operation will be our strongest defense in preventing the institution of undesirable proposals.

It has been repeatedly stated that medicine, represented by its organizational officers, should take the initiative and lead. Michigan's profession, through its State Medical Society, is now evidencing sound leadership.

UNIQUE BOOK-FINDING SERVICE LOCATES "HARD-TO-OBTAIN" VOLUMES IN WORLD-WIDE SYSTEM

Every person at one time or another is confronted with the problem of wanting a particular book that is no longer available through the regular publishing or bookstore channels. When a volume has reached that stage of scarcity, it is designated as "out-of-print" and commences to lead an elusive existence.

The American Library Service, New York City, organized thirteen years ago a world-wide system to track down and snare out-of-print books in any language and on any subject. They have been singularly successful in this field. This service also extends to back numbers of all magazines.

Whether the book is technical or historical, genealogical or literary, or just a school book through which a grown-up wants to recapture his youth by re-reading, the American Library service has built up a system adept at finding it.

The American Library Service also conducts special departments for the purchase of books, whether a single volume or a complete library, as well as autographs of literary or historical value. It also supplies current books of all publishers.

UNIVERSITY OF MICHIGAN MEDICAL SCHOOL

Intensive Post-Graduate Courses

Diseases of Metabolism, May 14-18, University Hospital, Ann Arbor.

*Proctology, May 28-June 2, Receiving Hospital, Detroit.

*Obstetrics, Gynecology and Gynecological Pathology, June 4-9, Receiving Hospital, Detroit.

Practitioners' Course, June 18-22, Receiving Hospital, Detroit.

Traumatic Emergency and Minor Surgery, June 25-29, Receiving Hospital, Detroit.

All dates inclusive.

Roentgenology, June 25-August 3, University Hospital, Ann Arbor.

DISEASES OF METABOLISM

University Hospital, Ann Arbor

May 14-18, 1934

Unless otherwise designated, class will meet in Medical Seminar Room, Simpson Memorial Institute

Monday, May 14

Morning

9:00-10:00 Registration. Room 2040, University Hospital.

10:00-12:00 Metabolic Mixture. Water Exchange. Inorganic Ion Exchange. Dr. Newburgh

Afternoon

2:00- 4:00 The Normal Diet. Miss MacKinnon

4:00- 5:00 Discussion.

Tuesday, May 15

Morning

9:00-10:00 Metabolism in Diabetes. Room 3410, University Hospital.

10:00-12:00 Principles of Dietetic Treatment. Dr. Newburgh

Afternoon

2:00- 4:00 Calculation of Diets. Miss MacKinnon

4:00- 5:00 Discussion.

Wednesday, May 16

Morning

9:00-12:00 Diabetic Clinic. Room G 106, University Hospital. Dr. Newburgh
Miss MacKinnon

Afternoon

1:00- 2:00 Teaching of Patients. Room G 106, University Hospital.

2:00- 4:00 Preparation of Diabetic Diets. Room B 114, University Hospital. Miss MacKinnon
Miss Cartmill

Thursday, May 17

Morning

9:00-10:00 Correlation of Various Classifications of Renal Disease.

10:00-11:00 Normal Physiology and Abnormal Variations of Kidney Function. Dr. Lashmet

11:00-12:00 Nature of Edema. Dr. Lashmet

*The programs in Proctology and in Obstetrics, Gynecology and Gynecological Pathology are not completed in time for publication, but will be available upon application by the time THE JOURNAL is delivered.

Afternoon

- 2:00- 4:00 Functional Tests in Renal Disease.
Dr. Lashmet
4:00- 5:00 Treatment of Renal Disease.
Dr. Lashmet

Friday, May 18*Morning*

- 9:00-12:00 Calcium Metabolism. Normal and Abnormal. Room 3410, University Hospital.
Dr. Freyberg

Afternoon

- 2:00- 4:00 Preparation of Nephritic Diet.
Miss Enke
4:00- 5:00 Discussion.

TEACHING STAFF

- L. H. Newburgh, M.D., Professor of Clinical Investigation in Internal Medicine
F. H. Lashmet, M.D., Assistant Professor of Internal Medicine
R. H. Freyberg, M.D., Instructor in Internal Medicine
Genevieve Cartmill, B.E., Instructor in Dietetics, Department of Internal Medicine; Dietitian, Metabolism Service
Frances MacKinnon, A.B., Dietitian, Diet Therapy Clinic
Gladys Enke, B.S., Dietitian, Ward Service

PRACTITIONERS' COURSE

Receiving and Herman Kiefer Hospitals
Detroit, Michigan
June 18-22, 1934

Monday, June 18*Morning*

- 8:00 Registration. Receiving Hospital
8:30 Symposium on Gastro-Intestinal Disease.
Peptic Ulcer.
a. Differential Diagnosis from Clinical Standpoint.
b. Differential Diagnosis from X-ray and other Laboratory Standpoints.
Dr. Hugo A. Freund
Dr. Wm. A. Evans

- 10:00 c. Medical Treatment.
Dr. C. E. Vreeland
11:00 Gastro-intestinal Neuroses. Dr. H. A. Reye

Afternoon

- 1:30 Complications of Peptic Ulcer and Indication for Surgical Treatment.
Dr. F. G. Buesser
2:30 Amebic Dysentery and Ulcerative Colitis. Diagnosis and Treatment.
Dr. B. C. Lockwood
4:00 Gross specimens. Gastro-intestinal Disease.
Dr. O. A. Brines

Tuesday, June 19*Morning*

- 8:00 Gall Bladder Disease. Clinical Picture. Differential Diagnosis. When to Operate.
Dr. R. J. Schneek
9:00 Agranulocytosis. Dr. Hugo A. Freund
10:00 Ano-rectal Disease. Methods of Examination. Office Procedures. Clinic.
Dr. L. J. Hirschman

Afternoon

- 1:30 Symposium on Heart Disease. Classification, History Taking, Signs and Symptoms of Heart Failure.
Dr. Norman E. Clarke
2:30 Pathologic Physiology.
Dr. Douglas Donald
3:30 X-ray and Electrocardiography in Heart Disease.
Dr. Douglas Donald
Dr. J. C. Kenning

Wednesday, June 20*Morning*

- 8:00 Diabetes mellitus. Requirements for Diagnosis. The Pre-Diabetic State.
Dr. Richard McKean
9:00 Principles of Treatment.
Dr. Richard McKean
10:00 Laboratory Procedures. Preparation of Diets.
Dr. Daniel P. Foster

Afternoon

- 1:30 Hypertensive and Arterial Sclerotic Heart Disease. Associated Conditions. Prognosis. Management.
Dr. C. G. Jennings.
2:30 Coronary Occlusion. Angina Pectoris.
Dr. Robt. L. Novy
3:30 Circulatory Problems in Relation to Obstetrics and Surgery.
Dr. E. P. Spalding

Thursday, June 21*Morning*

- 8:00 Treatment of Heart Disease.
Dr. Robt. L. Novy
9:00 Clinical Bedside Demonstration.
Dr. W. B. Cooksey
Dr. Douglas Donald
Dr. Robt. L. Novy
Dr. E. D. Spalding
11:00 Nephritis.
Dr. Alpheus Jennings

Afternoon

- 1:30 Problems in the Treatment of Diabetes. Case Demonstration. The Use of Insulin.
Dr. Richard McKean
3:00 Complications of Diabetes. The Disease in Middle Life and in Old Age.
Dr. Daniel P. Foster

Friday, June 22*Morning*

- Herman Kiefer Hospital
Dr. Bruce Douglas and Staff
8:00 Pulmonary Tuberculosis. Requirements for the Diagnosis.
9:00 The X-ray in Diagnosis and in Determination of Activity of Foci.
10:00 Tuberculosis in Children. The Tuberculin Test. Indication for Collapse Therapy.

Afternoon

- 1:30 Surgical Indications and Results in Pulmonary Tuberculosis.
Dr. E. J. O'Brien
2:30 Contagious Diseases. Dr. John E. Gordon

TRAUMATIC EMERGENCY AND MINOR SURGERY

Receiving and Herman Kiefer Hospitals
Detroit, Michigan
June 25-29, 1934

Monday, June 25*Morning*

- 8:00 Registration Receiving Hospital
8:45 Immediate Care in Traumatic Injury, and Recognition and Treatment of Shock.
Dr. Roy D. McClure
10:00 Differential Diagnosis in Acute Abdominal Conditions.
Indications for Exploration
Choice of Procedures
Operative Clinic Dr. H. K. Shawan

Afternoon

- 1:30 Factors in Estimation of Surgical Risk.
Dr. E. D. Spalding
- 2:30 Pre-operative and Post-operative Care.
Dr. L. J. Morand
- 3:30 Injuries to the Eye.
Dr. Don M. Campbell

Tuesday, June 26*Morning*

- 8:00 Clinic. Plastic Surgery.
Principles and Technic in Care of Skin
Lesions and Injuries.
Skin Grafting. Dr. C. L. Straith
- 10:00 Clinic. Recognition and Treatment of
Injuries to Kidney, Ureter and Bladder.
Dr. H. W. Plaggemeyer

Afternoon

- 1:30 Clinic. Genito-Urinary Tract. Acute
and Chronic Infections and Secondary
Lesions. Dr. F. H. Cole
- 3:00 Clinic. Peripheral Vascular Insuffi-
ciency. Varicose Veins. Buerger's Dis-
ease. Dr. E. A. Osius

Wednesday, June 27*Morning*

- 8:00 Diagnosis of Cranial and Spinal Injuries.
The Neurological Examination.
Dr. H. A. Reye
- 9:00 Traumatic Neuroses. Dr. H. A. Reye
- 10:00 Demonstration of Cases.
Dr. Frederic Schrieber
Dr. E. S. Gurdjian
Dr. J. C. Kenning

Afternoon

- Herman Kiefer Hospital
- 1:30 Surgery of Chest.
Including Care of Accidental Injuries
as well as the Newer Surgical Methods
in Care of the Tuberculous.
Dr. E. J. O'Brien

Thursday, June 28*Morning*

- 8:00 Clinic. Major and Minor Injuries.
Dr. W. J. Cassidy
- 10:00 Office and Emergency Treatment of Ano-
rectal Conditions. Dr. L. J. Hirschman

Afternoon

- 1:30 Infections of Hand. Indications and
Technique for Drainage and other Sur-
gical Intervention. Dr. C. S. Kennedy
- 3:00 Burns. Recent American Medical As-
sociation presentation, with use of Lan-
tern Slides and Moving Pictures.
Dr. Clyde I. Allen

Friday, June 29*Morning*

- 8:00 Fractures. Dr. A. D. LaFerte
Dr. F. C. Kidner
- 11:00 Osteomyelitis. Dr. G. C. Penberthy

Afternoon

- 1:30 Injuries to the Newborn. Dr. David J. Levy
- 2:30 Prevention and Repair of Injuries to
Birth Canal. Dr. Ward F. Seeley

ROENTGENOLOGY

University Hospital, Ann Arbor
June 25-August 3, 1934

Medical Roentgenology: Advanced Course. The first half of this course consists of an intensive systematic laboratory study of the physical principles of x-ray production, the mechanics of x-ray

apparatus, and the chemistry of photography. The second half will be devoted to instruction in film interpretation and fluoroscopic procedures.—Professor Fred F. Hodges and Staff.

For information address Department of Post-Graduate Medicine, University Hospital, Ann Arbor, Michigan.

MICHIGAN STATE MEDICAL SOCIETY

and

DEPARTMENT OF POST-GRADUATE MEDI-
CINE, UNIVERSITY OF MICHIGAN
POST-GRADUATE CONFERENCE—FOUR-
TEENTH COUNCILLOR DISTRICT

at

Adrian—Masonic Auditorium
Thursday, May 10, 1934

Afternoon

- 2:30 Prevention and Repair of Birth Injuries to
the Mother—Dr. H. H. Cummings, Ann Ar-
bor.
- 3:30 Differential Diagnosis in Acute Abdominal
Disease—Dr. Eugene Potter, Ann Arbor.
- 4:30 Diagnosis and Treatment of Pneumonia—Dr.
E. D. Spaulding, Detroit.
- 6:30 Dinner.
Address—The Recognition and Management
of Speech Defects—Professor John R. Muys-
kens, Ann Arbor.

Dr. H. H. CUMMINGS, *Councillor*.

A. M. A. MEETING

This will be held in Cleveland the week of June 10. To register and attend it is necessary to present your 1934 Fellowship Card.

COUNTY SOCIETIES**DICKINSON-IRON COUNTY**

The Dickinson-Iron County Medical Society met on March 29, at 7 p. m., at the Milliman Hotel for a dinner meeting. The president, W. J. Kofmehl, presided, and the following members answered roll call: Drs. Haight, Kofmehl, Libby, Hayes, Hamlin, Fredling, Browning, Alexander, Crowell, Smith, Frederickson, Drury, Boyce, Walker, Huron and Menzies. It was voted to keep the annual dues of the society at \$12.00.

Dr. Clifford Menzies of the Ford Hospital, Iron Mountain, was elected a member.

We highly appreciated the following program: Dr. Moses Cooperstock of the Northern Children's Clinic speaking on "Asthma, An Allergic Disease," and Dr. Eugene Elzinga, orthopedic surgeon for the Michigan Crippled Children's Commission, speaking on "Acute Osteomyelitis."

CHARLES P. DRURY, *Secretary*.

LIVINGSTON COUNTY

Twelve members and seven guests including representatives of the Livingston County Dental Association met at the State Sanatorium on Friday evening, April 6, 1934, and enjoyed a fine chicken dinner.

The business session that followed included the reading and approval of the minutes of the March meeting. A preliminary report of the Committee on "Preventive Medicine" was mentioned by the secretary. He reported that the Committee had met as guests of Doctor Mellus at a dinner in Brighton on the evening of April 3. Commissioner Vaughn,

of the Health Department of Detroit, very kindly met with the Committee and discussed his plans in full, and the possibilities for Livingston County was a live subject of speculation. A detailed recommendation for public health and preventive medicine activities in our County Society will probably not be formulated before the fall months of this year.

The secretary reported his attendance at the annual conference of county secretaries. He also announced that a University Hospital Post-Graduate Extension Course for our Councilor District would be held at Adrian in the afternoon and evening of May 10.

The president, Doctor Leslie, urged the members of the Society to support the coming referendum on a State Bond issue because of its vital importance to the immediate welfare of the people of Michigan and because certain of the state institutions, including the Sanatorium at Howell, will profit by the building construction that they will receive if this Act is approved.

An informal discussion took place concerning the possible action of the House of Delegates at a special meeting to be held in Flint on April 12. While no details of the action to be taken there were available to the Society, it was felt that any precipitous action on the part of the House of Delegates in the field of medical insurance might conceivably be unfortunate at this time. While this was the sense of some members on this mute subject, it was felt that we were too much in the dark to instruct our delegate as to the proper action to take at Flint, should this subject come up for action, and that we would rely entirely upon the exercise of his good judgment in the matter.

Following the business session the Society was fortunate in hearing Dr. Charles L. Brown, Professor of Medicine at the University of Michigan, give a very clear and practical discourse on the subject of "Medical Diseases of the Kidney." Doctor Brown clarified many of our difficulties concerning the distinction between nephritis and nephrosis. He touched on the problem of treatment in some detail and referred to the use of neutral diets and alterations of the acid-base equilibrium in the elimination of edema. The importance of focal infection was stressed, and all in all it was a most practical talk on a very difficult subject and was widely appreciated by those fortunate to hear it.

R. S. ANDERSON, M.D., *Secretary.*

SAINT CLAIR COUNTY

A regular meeting of the Society was held at the Harrington Hotel, Port Huron, Michigan, Tuesday, March 20, 1934. At 6:30 p. m. supper was served to nineteen members and three guests and before the meeting convened four additional members were present.

The meeting was called to order at 8 p. m. by the president, Dr. A. B. Armsbury. The minutes of the preceding meeting were read and approved. Several communications from the office of the secretary of the Michigan State Medical Society were read. Dr. Henry C. Wass of Saint Clair, Michigan, was elected to active membership in the Society. The application for membership of Dr. Ralph M. Burke of Emmett, Michigan, was read and referred to the Censors for action.

The president then introduced the guest-speaker of the evening, Dr. Julius H. Powers of Saginaw, whose subject was "Hand Infections." Dr. Powers interspersed his remarks with lantern slide views to bring out salient points in the consideration of his subject. The speaker stressed the following points: lateral incisions for felon, teno-synovitis and arm drainage rather than incisions directly onto the ten-

dons and nerves, crucial incision in carbuncle with undercutting, the use of vaselin gauze for drains which should as a rule be removed within forty-eight hours, no early incision in lymphangitis but rather a late incision after localization, the use of general anesthesia for incision and adequate drainage rather than insufficient drainage referred to as a medical incision so often the case when no anesthetic is used and the constriction of the limb at a higher level for one hour after incision to avoid systemic toxemia.

Discussion was opened by Doctor Thomas, followed by Doctors Smith, Sites, Burley, MacKenzie and Heavenrich. Doctor Powers then closed the discussion.

Upon motion by Doctor Heavenrich the speaker was given a rising vote of thanks by the Society for his long trip and fine address.

The meeting adjourned at 9:30 p. m.

A regular meeting of the Society was held at the Harrington Hotel, Port Huron, Michigan, Tuesday, April 3, 1934.

Supper was served to about twenty-five members and guests and prior to the beginning of the program twenty-eight members and four guests were present.

The meeting was called to order by President Armsbury. The minutes of the preceding meeting were read and approved. An application for membership was received from Dr. Wilbur S. Henderson and referred to the Censors for action at the next meeting. Dr. Ralph M. Burke of Emmett was elected to active membership in the Society. A letter from Doctor Kidner of Detroit was read and the Society selected one of the three tentative subjects suggested by Doctor Kidner for the meeting of May 15, 1934, at which time Doctor Kidner is to be our guest-speaker.

A letter was read from the Chamber of Commerce naming the Public Health Committee of that organization comprising Doctors Attridge, Cooper and Battley. Doctor Cooper, chairman of the Medico-legal Committee of the Society, read an opinion from the office of the Prosecuting Attorney with regard to physicians divulging diagnoses to the Welfare Commission of the County in cases where persons on the welfare list were receiving treatment. The opinion expressed was that such information so received by the physician is not a privileged communication and therefore may be divulged to the Welfare Commission, but notwithstanding the physician should endeavor to secure the permission of the patient before so doing. A motion to record said opinion and place the letter on file was carried.

The president read a letter from the Probate Judge advising the members of the Society to refrain from sending CCC cases to the hospital for treatment unless the same were most urgent. The Judge further stated that unless this was observed there was a danger of the County Supervisors rescinding their action to permit local hospitalization owing to the expense involved. Doctor Heavenrich reported to the Society that the Kroger Grocery Company was protected by adequate insurance in compensation cases and that the local physicians would be allowed regular fees for their services in such cases. The doctor further stated that he was advised the company would allow a fee of two dollars for making physical examinations of new employees.

The president appointed a special committee consisting of Doctors Burley and Brush to call upon the management of the Harrington Hotel and arrange for better dining room service for our meetings.

At the request of the president, Doctor Heavenrich introduced the guests-speaker of the evening:

Dr. Carl F. Moll of Flint. Doctor Moll addressed the Society upon the subject "Sciatica" and stressed the following points: His belief that occupation and exposure to wet and cold were both etiologic factors, that the condition was a great trial to industrial insurance companies, health insurance companies, and also to the physician, that males were preponderantly affected, that thin rather than fat persons were more often affected, that a careful taking of histories would frequently elicit trauma although care should be observed not to encourage the patient to do so, that a thorough painstaking physical examination should be made in every case and an effort made to find basic organic disease or focal infection, that rest in bed with a weight placed on affected leg and foot in extension apparatus was probably the best treatment in his opinion. Discussion by Doctors Sites, Attridge, MacKenzie and Heavenrich followed. A rising vote of thanks was given Doctor Moll for his long trip and splendid address.

GEORGE M. KESL, *Secretary-Treasurer*.

MONROE COUNTY

The members of the Monroe County Medical Society and their ladies had a Valentine bridge party at the Monroe Country Club February 15, 1934. They invited the dentists of the county and their ladies. A large number attended and enjoyed the excellent dinner, Valentine decorations, the bridge game, and also the other refreshments besides the dinner. All present expressed their appreciation to the committee in charge, Dr. and Mrs. J. J. Siffer, of Monroe, and asked for another such party before the summer recess.

The March meeting of the society was held March 15, at the Park Hotel, Monroe, beginning with a steak dinner. Dr. C. D. Brooks, of Detroit, presented the subject "Biliary Tract Disease" in his usual highly informative and entertaining fashion. He illustrated his talk with lantern slides.

FLORENCE AMES, M.D., *Secretary*.

WOMAN'S AUXILIARY, MICHIGAN STATE MEDICAL SOCIETY

MRS. ELMER L. WHITNEY, President
18224 Wildemere Ave., Detroit

MRS. C. L. STRAITH, *Secretary-Treasurer*
19305 Berkley Road, Detroit

State Medical Journal May 1934
Dear Auxiliary Members:

It is time for us to begin thinking about attending the annual meeting of our National Auxiliary, which will be held in Cleveland, June 11 to 15, 1934.

Mrs. Clyde Cummer, wife of the president of the Ohio State Medical Society, has been appointed social chairman of the Auxiliary meetings. Every effort is being made to make our visit to Cleveland a huge success.

The Carter Hotel, in the center of the city, has been selected for headquarters and all the Auxiliary activities will be taken care of under the Carter roof. This year the Auxiliary will be on the first two floors, with the Exhibits and Committee rooms easy of access from the main lobby of the hotel.

A most unusual and interesting program has been planned for the business meetings of the Auxiliary. The rest of the time will be filled with many entertaining trips and social affairs arranged by our Cleveland hostesses. You will be kept so busy that your husband will scarcely realize that you are with him.

Because this convention is being held so near us, I feel this year is an opportune time for our Michigan members to attend. I know I do not need to urge those of you who have attended previous National Conventions. I do hope as many of you as possible will plan to attend this year. I can assure you that you will not only enjoy yourselves immensely, but you will also make many pleasant friendships, receive new ideas and inspirations for your auxiliary work, and will come home feeling you have had a very profitable vacation.

(Mrs. E. L.) IRENE H. WHITNEY.

Bay County.—Mrs. Robert H. Criswells was hostess to the Women's Auxiliary to the Bay County Medical Society at her home, 2131 Center Ave., Bay City, on March 14. Following the buffet dinner, which was attended by twenty-four members, Mrs. Paul Urmston reported on the State Auxiliary Executive Board meeting held in Detroit in January. Dr. Clyde Tarter, of Standish, then spoke on "Preventatives to Tuberculosis," illustrating his talk with slides.

(Mrs. Edwin C.) JOSEPHINE MILLER,
Publicity Chairman.

Kent County.—Dr. William R. Torgerson discussed the medical and economic problems of Puerto Rico and Dr. H. E. Veldman spoke on China from the medical viewpoint at a meeting of the Woman's Auxiliary to the Kent County Medical Society, which was held at 2 o'clock Wednesday afternoon, March 21, in the club rooms of the Medical Arts Building. Fifty members were present.

Mrs. W. D. Lyman presided at the tea urn, arrangements for the tea being in charge of Mrs. Reuben Mauritis and Mrs. Lyman.

(Mrs. W. R.) ORBA DEAN TORGERSOIN,
Secretary.

Oakland County.—Twenty-four members of the Oakland County Medical Auxiliary enjoyed a luncheon at the Willow Tea Room, in Royal Oak, on March 16. N. J. Quickstad, superintendent of schools in Royal Oak, gave an interesting account of some aspects of Mental Hygiene. A business meeting followed the talk. Plans are being made to entertain the Jury Club in the near future. There will be Hygeia exhibits at the Webster School, in Pontiac, and at the Auburn Heights School for their May P. T. A. programs.

(Mrs. R. H.) HELEN C. BAKER,
Publicity Chairman.

Wayne County.—Several very fine artists are listed among the membership of the Woman's Auxiliary to the Wayne County Medical Society. That all might enjoy their work, an art exhibit, by and for members of the Auxiliary, was held during March. Mrs. Jack Agins was co-chairman of the Program Committee for this event.

All who had done any work in oil painting, sculpture, water colors, etching, dry-point, or pencil and ink were invited to contribute. Mr. Sarkis Sarkisian, Mr. John Pappas, and Miss Mildred Williams made up the impartial jury chosen by Mrs. George Kemperman to select the exhibits.

The exhibit opened on Sunday afternoon, March 11, with a musical tea at the club house. On this occasion Mrs. H. Lee Simpson gave a most interesting and enlightening talk on "Modern Art." In the absence of Mrs. Claire L. Straith, president of the Auxiliary, Mrs. Frank W. Hartman, vice president and program chairman, introduced the speaker. Much enjoyment was added to the program by the playing of a group of Russian Gypsy Classics by Dr. and Mrs. Jack Agins. The Board of Directors

acted as hostesses, and Mrs. Wm. J. Stapleton, Jr., and Mrs. A. B. McGraw, presided at the tea table.

The display was on view at the club house each afternoon until March 15. It was also a feature of the regular monthly meeting of Tuesday, March 13. On this occasion Mrs. Simpson again gave a short talk on art, her subject being "Understanding Contemporary Expression."

She said that people who have not studied art are prone to criticize what they personally do not understand or have not experienced. It is only natural to like paintings of scenes which we know and experiences which we have had. Those who have spent some time in the country prefer pastoral scenes, while those who have always lived in the city prefer pictures of city life and people. To appreciate art we must cast our personal prejudices aside and seek to understand the feeling that the artist has endeavored to express within the limitations imposed upon him by the materials he has used.

All who attended the series of Ancient History lectures, sponsored by the Study Group of the Auxiliary, regretted the completion of the course. It is hoped that the meetings will be continued next year.

On March 6, Mrs. Roger V. Walker, chairman of the Social Committee, entertained the members of the executive board of the Woman's Auxiliary, at luncheon in her home, preceding the monthly board meeting.

The Auxiliary served refreshments after the delightful plays presented by the Dramatic Section of the Wayne County Medical Society at the Players' Playhouse, on Saturday, March 10.

(Mrs. Clifford) LORRAINE E. LORANGER,
Publicity Chairman.

MICHIGAN'S DEPARTMENT
OF HEALTH

C. C. SLEMONS, M.D., Dr.P.H., Commissioner
LANSING, MICHIGAN

COMMUNICABLE DISEASES

Scarlet fever incidence is unusually high at present, with 7,716 cases reported for the first three months of the year. This is considerably above that for the same period in 1933, and the 1933 level was in turn far above the average for the preceding five years. The total number of deaths in 1933 was 157 as compared to 112 for 1932, a 40 per cent increase. The peak of the seasonal curve usually continues until May before there is much tendency to decline. In 1933 the peak occurred in May.

While there is a question as to whether the actual incidence of scarlet fever is on the increase or whether we are merely having a better degree of reporting, it would appear that the number of cases is greater than heretofore.

The number of mild cases now occurring results in many being unreported. There are a great many that have no medical attention. Nevertheless, it may be that there is some tendency toward increase in virulence, at least in some local communities.

The Michigan Department of Health receives many calls for Dick test toxin and toxin for active immunization. These products are no longer being distributed. Scarlet fever antitoxin has been supplied in limited quantities and its use has been advised therapeutically only for the severely toxic case.

In the Upper Peninsula there are a number of scattered communities, particularly in the western section, in which there are some rather intensive outbreaks. For the most part, the northern half of the lower peninsula is relatively free. The tier of counties on the southern border is also rather free, judging from the number of reported cases. Some of the more populous counties which have a lower than average incidence are Bay, Saginaw, St. Clair, Macomb, and Wayne. Those which have been showing a very high incidence are Genesee, Kalamazoo, Muskegon, Ingham, and Kent.

Health officers and physicians are urged to keep on the lookout for scarlet fever cases, particularly those that are mild or that have atypical symptoms. All cases which can be so diagnosed should be reported and quarantined according to the regulations.

Comment has been made from time to time during the last year or two regarding the extremely low incidence of smallpox. There has recently been an increase in the reported cases of this disease. It is evident that quite a few of the cases reported as smallpox are chickenpox, but there has been some increase in the number of cases which are apparently bona fide.

The principal focus has been in the rural parts of Houghton County. Whatever other cases of the disease there may actually be in the state, they are very much scattered. From January 1 to March 31 the number of cases of smallpox reported totalled thirty-three.

The incidence of typhoid fever is about normal for the season, there being a minimum number of cases. One small outbreak of more than usual interest occurred on Beaver Island. Three cases, all using milk from the same source, occurred in March. The milk supply in question was a small one, with only five families concerned. The outbreak is of interest because of its location and the season of the year, and the epidemiological possibilities. The carrier who was the source of the outbreak was located.

Several cases of typhoid have occurred recently in the city of Saginaw. Three of these were apparently water-borne and due to the use of a private well.

All other cases occurring throughout the state have been scattered.

Diphtheria continues to show a downward trend, the number of cases so few that it might be said to be a rare disease. However, this should not be considered as conclusive evidence that the fight against diphtheria has been won. Considerably more immunization must be done among young children before this can be an assured fact.

The season for measles is at hand, and it cannot be said too often that this is a dangerous disease for young children. If a child contracts measles before he is a year old his chances of dying are more than 50 times greater than if he has the disease between the ages of five and fifteen. A high incidence of this disease is not expected throughout the state this year, but undoubtedly there will be quite a few communities that will have their "measles year" resulting in sharp outbreaks. Health officers and physicians are again reminded that a baby or young child who is known to have been exposed to the disease may be protected previous to the fifth or sixth day after exposure by the use of convalescent serum or whole blood from an immune person.

Dr. R. B. Howard, District Health Officer of the four-county consolidated district made up of Alpena, Cheboygan, Montmorency and Presque Isle Counties,

with headquarters at Rogers City, has resigned. Dr. Gordon B. Moffat, Acting Health Officer of Genesee County, has been appointed to fill the vacancy and will assume his duties at Rogers City on May 1.

Dr. Leslie Lambert, who is at present taking post-graduate work at the School of Hygiene and Public Health at Johns Hopkins University, will resume his work as Genesee County Health Officer on June 1.

C. D. B.

KAHN TEST REESTABLISHED

Reestablishment of the Kahn test in the laboratories of the Michigan Department of Health on April 15, 1934, was made possible by an appropriation of the second special session of the Legislature. Since the discontinuance of the test on July 15, wide protest has come from physicians of the state, especially those in rural areas.

The test will apply only to patients who cannot afford to pay the commercial laboratory fee. The new examination blank for specimens carries the following statement to be signed by the physician: "I certify that this patient has stated to me that he (she) cannot pay the regular commercial laboratory fee for this blood test."

SUICIDES AND HOMICIDES

The number of suicides in Michigan, which has mounted steadily since its spectacular rise in 1930, dropped in 1933. Only 816 persons took their own lives last year, in contrast to the high mark of 937 in 1932.

The increase in suicides has been widely commented upon as an accompaniment of the depression. It began in 1930 when 812 suicides were reported compared to 674 in 1929. Another sharp rise followed in 1931, when the number went up to 925, to mount to 937 in 1932. The drop to 816 in 1933 makes that year almost exactly balance 1930.

Homicides have decreased steadily within the past five years. They dropped from 395 in 1929 to 337 in 1930, to 285 in 1931, to 267 in 1932, and to 239 in 1933.

VIOLENT DEATHS IN 1933

In the year 1933, 9 per cent of all the deaths in Michigan were due to violence. There were 4,344 such deaths, 3,289 accidents, 239 homicides, and 816 suicides. This is a slight increase over the 8.5 per cent of 1932.

It is, of course, inevitable that there should always be some deaths due to accidents, no matter how careful we are, but when we consider that 1,259 of the accidental deaths in 1933 were due to the use of the automobile, it must be evident that there is something radically wrong with our control of the highways. This included seventy-nine deaths due to railroad and automobile collision and ten due to street car and automobile collision, the other 1,170 being due to automobiles alone. This included not only the accidents to cars, but to pedestrians as well. We are not able to differentiate between these figures. This is a slight increase from the 1932 total of 1,222 deaths due to these causes.

The next most important cause of accidental deaths was falls, with 753 deaths due to this cause compared with 651 in 1932.

Drownings followed falls, with 281 deaths in 1933, a sharp reduction from the 346 in 1932.

There was a slight decrease, also, in the number of deaths from burns and a marked decrease in deaths from conflagration. Firearms showed an increase, and deaths due to excessive cold were markedly increased, there being twenty deaths from this cause in 1933 compared with three in 1932. On the

other hand, there were seventy-nine deaths from sun-stroke, as compared with only thirty in 1932.

The number of deaths from each accidental cause in 1933 and in 1932 appears in the following table:

	1933	1932
Accidental Absorption of Gas.....	65	82
Acute Poisoning	56	57
Conflagration	45	63
Burns	184	188
Suffocation	36	48
Drowning	281	346
Firearms	94	86
Cutting or Piercing	10	10
Falls	753	651
Injury by Animals.....	32	27
Excessive Cold	20	3
Excessive Heat	79	30
Lightning	12	4
Electricity	20	20
Other Accidents	130	142
Mines and Quarries	8	7
Agricultural Machinery	20	10
Elevators	10	7
Other Machinery	28	31
Other Railroad Accidents.....	78	83
Other Street Car Accidents.....	11	16
Motorcycle Accidents.....	19	7
Other Land Transportation.....	23	22
Air Transportation	16	17
Railroad and Auto Collision.....	79	86
Street Car and Auto Collision.....	10	6
Auto Accidents	1,170	1,130
Total Auto	1,259	1,222
Total	3,289	3,179

W. J. V. D.

OBITUARY

DR. J. FRANK HACKETT

Dr. J. Frank Hackett, son of Dr. William A. Hackett of Detroit died at Harper Hospital on April 10th. Dr. Hackett had been a sufferer from Bright's disease for nearly five years before he died. He was born in Detroit in 1899, where he received his preliminary education. After graduating from the old Central High School he attended the University of Michigan, where he obtained his degree of M.D. in 1924. A year's internship was spent in Harper Hospital, following which he entered upon a two-year period of study offered by the Mayo Foundation at Minnesota. Dr. Hackett opened an office on Livernois Avenue, Detroit, but after one year and a half of practice he moved to Silver City, New Mexico, where he spent two years. Returning to Detroit in 1929 he entered government service and was sent to St. Louis, where he remained until about a year ago. He is survived by his widow, Rose; a brother, J. B. Hackett and his father, Dr. William Hackett, all of Detroit.

DR. DON D. KNAPP

Dr. Don D. Knapp of Flint died of heart disease at his home on March 19, 1934. He was born at Fenton, fifty-two years ago, where his father, Dr. Leonard E. Knapp, practiced for many years. Dr. Don Knapp was former health officer of Flint and up to the time of his death he was president of the staff of Hurley Hospital. He began practice in Flint in 1910. "The credit of our simple yet effective Code of sixteen Rules which has established a successful participating plan of taking care of the

medical needs of the indigent is entirely his," writes one of his colleagues. "He had acquired a rare experience in Public Health work by serving as health officer when the City was small and clinics were not in vogue and then again three years ago after the Health Department had established and maintained a full coterie of free clinics. This experience coupled with a keen analytical perception of sensing abuses, of placing departmental responsibilities, and a sympathetic understanding of human suffering gave him a rare judgment of fairness which is seldom encountered." Regarding his personal qualities the *Flint News* contained the following tribute: "Known to his wide acquaintance as a kindly, modest—even retiring—man, his colleagues in the medical profession respected him for these same qualities. He was always mentioned as a gentleman of the quiet type who found much pleasure outside his professional life in his hobby of gardening. Dr. Knapp was not only a student of medical science but a capable botanist. A year after Dr. Knapp started his medical work in Flint, he was made city health officer. His interest in public health problems never slackened and at the time of his death he was serving as president of Hurley hospital staff. He was a member of the committee representing the Genesee County Medical Society that drafted a plan for the care of the indigent sick by the county welfare administration. This plan is in use not only in Genesee county but also in most other counties in Michigan and many of its points were reflected in federal recommendations to states for handling sick dependents. "Dr. Knapp will be greatly missed, not only for the valuable service he rendered the community, but also for the qualities of friendliness and character for which he was prized."

DR. BYRON LONEY

Dr. Byron Loney of Detroit died on March 16, 1934. He was born at Walla Walla, Washington, in 1883. In 1895 his father died and in 1903 his mother also died. The son moved to Toronto, where he was raised by a maiden aunt, a teacher in the Toronto schools. Byron Loney studied medicine and in 1916 obtained the degree of Bachelor of Arts and Bachelor of Medicine at the University of Toronto. After graduation he came to Detroit to serve his internship, and in 1918 he became lieutenant in the Medical Corps of the United States Army at Camp Custer and received his discharge the following year. He became associated with the late Dr. Max Ballin until 1923, when he was appointed medical officer of the Detroit Edison Company, a position he held up to the time of his death. Dr. Loney was a member of the Wayne County Medical Society, Michigan State Medical Society and of the American Medical Association as well as Detroit Academy of Surgery and a Fellow of the American College of Surgeons. In 1919 he married Louise McKinnon, who survives him. He also leaves one son, Robert, 12, a daughter, Mary, 8, and two brothers, W. T. Loney of Saginaw, Michigan, and Milton R. Loney of Walla Walla, Washington.

DR. JAMES N. GARBER

Dr. James N. Garber of Detroit died at Grace Hospital, April 7, 1934. Dr. Garber was born in Pennsylvania on November 2, 1868. He obtained his Bachelor of Science from Ohio Northern University in 1904 and also graduated in medicine from the Detroit College of Medicine and Surgery in 1907. He established the Garber Hospital, corner of Trumbull and Marquette Avenue, Detroit, in 1902. He is survived by his widow and one son, Ralph. Dr. Garber was a member of Wayne County Medical Society, Michigan State Medical Society, and American Medical Association.

GENERAL NEWS AND ANNOUNCEMENTS

Delegates are requested to present a report upon the Special Session at their next county meeting.

We are glad to report the recovery of Councilor George C. Hafford from serious injuries received in an automobile accident while en route to Florida.

The sympathy of our members is extended to President G. L. Le Fevre, by reason of the death of his brother on April 10, 1934.

A postgraduate conference will be held in Alpena on May 9. This conference is in honor of Dr. D. A. Cameron of Alpena, who has completed fifty years of practice in that community.

Dr. William Seymour, of Detroit, has tendered his resignation to the Public Welfare Commission. Dr. Seymour was appointed to the commission by Mayor Frank Doremus in 1923 to fill the vacancy created by the resignation of Dr. Max Ballin. Dr. Seymour, however, maintains his position as attending surgeon on the staff of the Receiving Hospital.

According to the Michigan Maternal Health League No. 6, 187 babies were born to indigent and welfare families in Detroit in 1933. According to statistics given out by the Welfare Department, City Physician's office and the Board of Health the estimated cost to the municipality is \$169.28 for each infant the first year of life.

Dr. T. J. Carney and Dr. R. A. Wilcox, owners of the Carney-Wilcox hospital in Alma, completed a business deal with the Michigan Masonic Grand Lodge officers on Saturday evening whereby they became the owners of the Michigan Masonic Home property on North State street, including the hospital building and also the lot upon which the old home is being razed.

The doctors plan to make the hospital into a county general hospital where doctors of this county may bring their charges. But due to the fact that the Masonic Home is now being wrecked and torn down, the grounds having to be filled in and graded, it probably will be fall before the hospital will be equipped and ready for use. It is a new, modern building, fireproof, and contains twenty-four rooms.

It is expected the present Carney-Wilcox hospital will be retained to use for convalescent patients.

DETROIT COLLEGE OF MEDICINE ALUMNI DAY

Annual Alumni Day of the Detroit College of Medicine and Surgery (now the Wayne University College of Medicine) will be held on Thursday, June 7th. Beginning at 9 A. M. at the College Auditorium, diagnostic medical clinics will be held by Dr. Charles Phillips Emerson, Professor of Medicine, Indiana University School of Medicine and William Carpenter MacCarty, director of the Department of Surgical Pathology of the Mayo Clinic. Dr. Emerson was on the Alumni Clinic program in Detroit several years ago and his presentation was so outstandingly brilliant that few who heard him then would willingly miss him this time. Dr. Mac

Carty's international reputation in general pathology and cancer diagnosis particularly is well known as an added feature. These two men will also conduct a clinico-pathological conference. The Detroit Dermatological Society has arranged a skin clinic which is expected to exceed in interest and teaching value previous clinics for which they are rightfully famous. A noon-day luncheon has been arranged for at the College Auditorium.

The banquet will be held at the Hotel Statler and will be in part a testimonial dinner to Doctors Angus McLean, Don M. Campbell and Andrew Bidle. Doctor James W. Inches will be the principal speaker of the evening. The banquet is the occasion of Class Reunions of the following classes and the chairman of each of these classes has been communicated with and he in turn will contact each member of his class: 1934, 1929, 1924, 1919, 1914, 1909, 1904, 1899, 1894, 1889, etc.

AMERICAN MEDICAL GOLFERS PLAY IN CLEVELAND, JUNE 11

The American Medical Golfing Association will hold its twentieth annual tournament at the Mayfield Country Club in Cleveland on Monday, June 11, 1934.

Thirty-six holes of golf will be played in competition for the fifty trophies and prizes in the eight events. The trophies include the Association Championship for thirty-six holes gross, the Association Handicap Championship for thirty-six holes net, the Choice Score Handicap Championship for thirty-six holes gross, the low gross Eighteen Hole Championship, the low net Eighteen Hole Handicap Championship, the Maturity Event limited to Fellows over 60 years of age, the Oldguard Championship limited to competition of past presidents, and the Kickers Handicap. Other events and prizes will be announced at the first tee.

Dr. Homer K. Nicoll of Chicago is president and Dr. Charles Lukens of Toledo and Dr. John W. Powers of Milwaukee are vice-president of the American Medical Golfing Association, which was organized in 1915 by Dr. Will Walter, Dr. Wendell Phillips and Dr. Gene Lewis, and now totals 1,100 members representing every state in the Union. The living past presidents include Dr. Wendell Phillips of New York, Dr. Thomas Hubbard of Toledo, Dr. Fred Bailey of St. Louis, Dr. Edward Martin of Philadelphia, Dr. Robert Moss of San Antonio, Dr. Charlton Wallace of New York, Dr. Will Walter of Chicago and Charlottesville, Va., Dr. James Eaves of San Francisco, Dr. Chester Brown of Danbury, Conn., Dr. Samuel Childs of Denver, Dr. W. D. Sheldon of Rochester, Minn., Dr. Walter Schaller of San Francisco, Dr. Edwin Zabriskie of New York, Dr. Frank Kelly of Detroit and Dr. John Walsh Croskey, Philadelphia.

CLEVELAND COMMITTEE

The Cleveland Committee is under the chairmanship of Dr. John B. Morgan, 1301 Medical Arts Building, Cleveland, Ohio. He will be assisted by Drs. R. H. Birge, A. V. Boysen, E. F. Freedman, F. T. Gallagher, Second Large, E. P. McNamee, J. J. Marek, Theodore Miller, U. V. Portmann and M. A. Thomas.

The Mayfield Country Club of Cleveland is described by Chairman Morgan as "probably the finest course in the district, and certainly one of the most interesting. Many championships have been held on this course, and I am sure the visiting doctors will be delighted with it in every sense of the word. It has a most beautiful club house, and we can promise a merry nineteenth hole and a dinner fit for a champion."

APPLICATION FOR MEMBERSHIP

All male Fellows of the American Medical Association are eligible and cordially invited to become members of the A. M. G. A. Write to the Executive Secretary, Bill Burns, 4421 Woodward Avenue, Detroit, for an application blank. Participants in the A. M. G. A. tournament are required to furnish their home club handicap, signed by the secretary. No handicap over 25 is allowed, except in the Kickers'. No trophy is awarded a Fellow who is absent from the annual dinner.

The twentieth tournament of the American Medical Golfing Association promises to be a happy affair, attended by some two hundred medical golfers from all part of the United States.

THE DOCTOR'S LIBRARY

Acknowledgment of all books received will be made in this column and this will be deemed by us a full acknowledgment to those sending them. A selection will be made for review, as expedient.

ALLERGY IN GENERAL PRACTICE. By Samuel M. Feinberg, M.D., F.A.C.P., Assistant Professor of Medicine and Attending Physician in Asthma and Hay Fever Clinic, Northwestern University Medical School; Professor of Medicine in the Cook County Graduate School of Medicine; Attending Physician, Cook County Hospital, Chicago. Illustrated with 23 engravings and a colored plate. Lea and Febiger, Philadelphia, 1934.

Feinberg's Allergy in General Practice is written, as intimated, primarily for the general practitioner. It is mainly devoted to Asthma and Hay Fever, which are dealt with from the etiologic, diagnostic and treatment viewpoints. Other allergic diseases are summarized in a clear and helpful manner. A generous reference list of original work on allergic disorders, is presented as a bibliography.

AMERICAN JOURNAL OF DIGESTIVE DISEASES AND NUTRITION. Editor in Chief, Dr. Frank Smithies, Chicago, Illinois. Vol. 1, No. 1.

The reviewer is welcome to welcome this new journal to the field that seems not overcrowded, namely that branch of Medicine which is concerned with Diseases of Nutrition and Digestion. The domain is large. The departments represented here are Clinical Medicine, Diseases of Digestion, Nutrition, Parasitology, Therapeutics, Roentgenology, Abdominal Surgery, Surgery of the Lower Colon and Rectum. The editorial council as well as Editors are nationally known in their various fields of work. This new magazine has a wider appeal than represented by those whose work is limited to gastro-enterology.

PRACTICAL ANESTHESIA FOR DENTAL AND ORAL SURGERY, LOCAL AND GENERAL. By Harry M. Seldin, D.D.S., Director of the Division of Dentistry, Department of Hospitals, City of New York; Honorary President of the Eastern Society of Dental Anesthetists; Formerly Chief of the Department of General Anesthesia, New York University, College of Dentistry. 525 pages, illustrated with 203 engravings. Published 1934. Lea & Febiger, Philadelphia, Pa. Price \$7.00.

This work meets the need of a comprehensive, accurate and practical textbook on dental anesthesia which includes of course anesthesia in jaw fractures which will meet the need not only of the dental profession but also of the medically trained oral surgeon. Explicit directions are given on both local and general anesthesia. Indications for each kind of anesthetic are clearly set forth. Sufficient knowledge of anatomy and physiology is presented to render the anesthetic technic intelligible. Likewise simple and accurate means are taught in the way of estimating the physical state of the patient.

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ROENTGENOLOGIC ASPECTS OF GASTRO-ENTEROLOGY*

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December 28, 1895, before the Physico-medical Society at Wurzburg, Wilhelm Konrad Roentgen read a paper, modestly entitled "Concerning a New Ray." In May of the following year Becker, in Berlin, filled the stomach and a portion of the intestine of a guinea-pig with liquor plumbi subacetatis and made a roentgenogram of this; the exposure required was given as twenty-five minutes. Cannon reported to the American Physiological Society in May, 1897, that, by mixing a small quantity of bismuth subnitrate with the food of cats, he had been able to study the contractions of the gastric musculature and the movements of the gastric content with the aid of the fluoroscopic screen. He stat-

ed: "In this study of the uninjured animal during normal digestion, an unsuspected nicety of mechanical action and a surprising sensitiveness to nervous conditions have thereby been disclosed." In September, 1899, Williams and Cannon fed to two children a mixture of about 30 c.c. of bismuth subnitrate with bread and milk, and observed with the fluoroscopic screen the

*Read before the Medical and Surgical Staffs of the Grandview Hospital, Ironwood, September 12; the Marquette-Alger County Medical Society, Marquette, September 13, and before the Iron-Dickinson County Medical Society, Iron River, Michigan, September 14, 1933.

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movements of the stomach during respiration and the changes in shape of the stomach during the digestive process. Of a third child, whom he had examined roentgenoscopically, Williams made roentgenograms at intervals of one to two hours. In 1901 Cannon obtained roentgenograms of the large and small intestine of the cat by use of the opaque enema. Rieder, in 1904, advocated ingestion of comparatively large quantities of bismuth subnitrate, to study the motor functions of the stomach and to demonstrate roentgenographically the contour, as well as the size, shape and position of the different portions of the gastro-intestinal tract. He considered this medium to be entirely harmless, and predicted that it would be of great value to medical practice and would contribute materially to the diagnosis of gastric and intestinal diseases. Hemmeter, in 1906, published the results of experimental production of ulcers in rabbits and visualization by means of roentgen rays of the denuded areas that he had coated with bismuth. He administered an aqueous suspension of bismuth to three patients, after they had undergone a period of fasting, and succeeded in demonstrating niches on the lesser curvature. In one of these cases, the finding was confirmed at operation. Schwarz, in 1908, succeeded in showing the duodenum roentgenographically, and accurately described the filling of the first portion, with rapid emptying of the descending and horizontal portions. He also recognized the first portion of the duodenum as the almost exclusive situation of duodenal ulcer. Reiche reported a case in 1909 in which he had visualized a large niche on the lesser curvature of the stomach, and subsequent examinations demonstrated that the bismuth meal had been retained for seven and a half hours. At necropsy an ulcer perforating to the pancreas was found. Bachem and Guenther introduced barium sulphate as a substitute for the bismuth preparations in 1910 and stressed several advantages, the greatest of which was the absolute nontoxicity of the barium salt. The excellent shadow produced in the roentgenogram, the not objectionable taste, and the inexpensiveness of the product were other advantages. In the same year Haudek published his experiences in the diagnosis of ulcer, stressing the niche and its permanence of situation at all angles and planes during palpatory manipulation. Faulhaber, in 1910, and Holzknecht, in 1911,

confirmed the experience of Reiche and Haudek, and their findings were accepted generally as a solid basis for the diagnosis of gastric ulcer. Holzknecht called the duodenum by its accepted anatomic name, "bulbus duodeni," and Haudek reported having observed a niche in duodenal ulcer similar to that seen in gastric ulcer. Cole, in a series of papers in 1911, 1912 and 1914, stated that duodenal deformity was the pathognomonic sign of duodenal ulcer. Barclay in England and Pfahler, Hulst, Case, George and Leonard, and Carman in America, were early contributors to the literature on the anatomy, physiology and pathology of the stomach and gastro-intestinal tract, as revealed by roentgenoscopic observations and roentgenograms.

In most epochal developments in medicine there are usually two groups concerned, the discoverers, and those with the inherent ability and the facilities at their disposal to apply the discoveries to the everyday problems of practice wherever they may be indicated. Carman and Miller came to The Mayo Clinic January 1, 1913, with an intimate knowledge of the discoveries and attainments pertaining to the roentgenoscopic and roentgenographic demonstration of lesions involving the gastro-intestinal tract. They had at their disposal a large clientele, everything required in equipment to examine the patients properly, and an established record system that allowed them full access to all information pertinent to the clinical, surgical and pathologic findings in each case. They first developed a comprehensive system of recording all their observations and interpretations, and made this an integral part of the system of the clinic. Carman attended the surgical clinics at the hospitals and was present at the operation in all cases in which the patient had been subjected to roentgenologic examination of the gastro-intestinal tract. He saw the abdominal viscera in situ and compared the physiologic manifestations under anesthesia with those he had observed roentgenoscopically. He visualized the lesions before surgical intervention, and, after the specimens had been excised, he went to the laboratory, where he was able to compare the gross macroscopic appearance with the shadow it had cast on the roentgenoscopic screen and on the roentgenographic plate. He studied, in the microscope, the evidence of the lesion, and checked this with his own interpretations. He be-

came conversant with the various surgical procedures carried out for the various types of lesions and, keenly alert to every opportunity, he developed a wide knowledge of post-operative appearances of the normal and abnormal gastro-intestinal tract. Carman and Miller kept in constant touch with the literature, particularly that bearing on their chosen specialty, noted all reported characteristic findings and evaluated them all from experiences in their own daily routine. Constantly reviewing their own material, they segregated the outstanding variations from the normal, noted the best reproductions of the normal, identified various types of the abnormal, took account of findings which seemed to indicate abnormality but which on subsequent examination were not present, and all other observations of possible interest. It has long been the practice at the clinic to dictate comprehensive notes on all the surgical findings immediately on completion of the operation. These are transcribed, with the pathologic report, and filed with the general records of the clinic and all other notes pertaining to each patient. For convenience of access, such of these as were pertinent to the correlation of the findings were copied onto the fluoroscopic sheets and the records retained in the department of roentgenology. The files of the department were in numerical sequence, similar to those of the general record file. Periodic recapitulation of the cases in which the roentgenologic findings agreed or disagreed with the clinical, surgical and pathologic findings provided an accurate check on the accuracy or lack of accuracy of interpretations. The clinical and surgical consultants were provided with tangible evidence of the value of roentgenologic interpretation in the presence of various types of lesions, and in some of the functional or reflex disturbances of the gastro-intestinal tract, and out of this grew a close coöperation that was beneficial to all concerned. With complete clinical and other notes contained in the history sheets made conveniently available, and the salient features correlated in their own departmental records, Carman and Miller were able to review the great mass of material on which was based their concept of the roentgenologic diagnosis of diseases of the alimentary tract. At the beginning of their work, they asked for, and received, the clinical history, and reviewed this prior to their examination.

Increasing experience revealed a tendency to attempt to make the roentgenologic interpretation fit the history, and very early in their work this practice was abandoned. Review of their early records revealed a much larger number of "indeterminate" findings during the period in which this practice persisted. Although the various observations were charted by underlining them on especially devised forms, the practice of transcribing these in the report was abandoned and only the roentgenologic diagnosis was sent to the clinician. Correlation by consultation between the roentgenologist, and the clinician or surgeon, was encouraged and in all cases of doubt the patient was examined again, with especial attention directed to the confirmation of the presence or absence of the type of lesion suspected by the consultants. Under this arrangement the percentage of accuracy increased perceptibly, confidence in the roentgenologic method of diagnosis was established, and a keener appreciation of the value, as well as of the limitations, of the method was engendered. Correlation of clinical and histologic findings in cases in which the roentgenologic findings were negative, proved these to be equally as accurate as the positive findings. This materially widened the scope of roentgenologic investigation. The rare finding of a major lesion involving the gastro-intestinal tract, when the symptoms offered little, if any, suggestion of it, also played a part in popularization of the roentgenologic method.

As the purpose of this paper is to prove the value of the roentgenologic method in the diagnosis of diseases of the gastro-intestinal tract, a review of the findings of one recent year will best illustrate some of the points that are of particular interest. In that period 24.37 per cent of the total number of patients registered in the clinic were referred for roentgenologic investigation of the gastro-intestinal tract or gallbladder. The esophagus, stomach and duodenum were examined in 49.8 per cent, the gallbladder in 29 per cent, and the colon in 21.2 per cent of these cases; the part to be examined was specified by the clinician and each examination was separate from the others. Many times, two or more examinations were requested of the same patient. The stomach, esophagus and duodenum were studied in 36 per cent; the stomach and gallbladder in 18.9 per cent; the stomach, gallbladder and colon in 5.3 per cent,

and the stomach and colon in 9.8 per cent. The gallbladder only was investigated in 15.1 per cent; the gallbladder and colon in 1.5 per cent, and only the colon in 13.4 per cent. It will be interesting to those of lesser opportunity, who are disturbed by the paucity of positive findings in their daily routine, to know that in this group the findings were negative in 70 per cent of the examinations of the stomach, in 70 per cent of the examinations of the colon, and in 64.8 per cent of the examinations of the gallbladder. Deducting multiple examinations of individual patients, findings were positive in 23.6 per cent of examinations of the stomach, in 19.4 per cent of the examinations of the colon, and in 24.1 per cent of the examinations of the gallbladder. In a comparatively large number of the cases in which the findings were negative, surgical intervention for other disorders had been carried out and opportunity was therefore afforded for examination of the gastro-intestinal tract and the gallbladder and to make surgical notes on these. In less than 5 per cent of cases lesions were found that should have been demonstrable by roentgenologic methods and were not so demonstrable. One cannot take credit for this high degree of accuracy, without acknowledging the part played by the clinician in requesting reexamination of patients whose clinical history strongly suggested the existence of a lesion. As I mentioned previously, the roentgenologic diagnosis is based solely on the roentgenoscopic findings as checked by the roentgenographic findings, and little of the history is known to the roentgenologist other than that concerning former operative procedures which might have a bearing on the present roentgenologic picture. The clinician correlates the clinical findings with the report of the roentgenologic and other laboratory findings, and when these are not in agreement, consultation is invited; in all cases in which there is any question, reexamination is requested and carried out.

Roentgenologic investigation of the gastro-intestinal tract should follow a definite routine, and coöperation of the patient is essential to the success of the examination. In order that there can be no misunderstanding the following instructions to the patient are printed on the envelope carrying the referring card: "On the evening previous to the examination, as near 7 p. m. as practicable, eat the type of supper to which you have

been accustomed. If you are not in the habit of eating an evening meal, eat one of moderate size. Do not eat or drink anything in the morning just preceding the examination." This card is presented at the gastric laboratory where analysis of the gastric content is carried out, and the patient is then referred to the roentgenologic laboratory for examination. The referring card is placed in a fresh envelope on which are printed the instructions: "Do not eat or drink anything between now and the time you report for the examination." The practice of roentgenologic observation of the progress of a meal through the gastro-intestinal tract at intervals for six hours, intended to reveal retention, has been abandoned at the clinic; after careful study of the results obtained it was not felt justifiable. In special studies for evidences of retention or lesions of the small bowel, 60 gm. of barium sulphate is administered in 60 gm. of any cooked wheat cereal to which a little skimmed milk and sugar may be added, and frequent periodic examinations are made during the period of six hours. Patients are examined usually in the standing position; if additional information is desired they may be placed on the horizontal table in the prone or the supine position. The contrast substance is made by mixing equal measures of barium sulphate, guaranteed free from impurities, and water. The barium is kept in suspension by a motor driven mixing device and is taken from this as required. Approximately 10 ounces (300 c.c.) are given to the patient, with instructions first to take about two swallows and wait for further instructions. Fluoroscopic observation and palpatory manipulation commence synchronously with ingestion of the medium. With this small amount of barium in the stomach, particular attention should be paid to observation of the walls; approximation of these by deep palpation will allow visualization of the rugæ as parallel, vertical strands, and irregularity of these suggestive of lesions or filling defects, particularly on the posterior walls, that might be obscured by larger quantities of the contrast medium. Small niches on the curvatures, particularly the lesser, might be more easily detected at this stage than later. The patient is then instructed to resume drinking the mixture. The barium should be watched in its progress along the esophagus for any suggestion of lesion or abnormality. When indicated,

a subsequent examination after the patient has been given a mixture of 3 parts barium sulphate and 1 part of acacia may be necessary accurately to define the lesion. This mixture passes more slowly, and has a tendency to adhere to the walls of the esophagus. Ordinarily, the stream of barium passes along the esophagus and lesser curvature of the stomach in a comparatively straight line. Any deviation of the stream above the cardiac orifice suggests the possibility of a congenitally short esophagus in a diaphragmatic hernia. A deviation and narrowing of the stream at or immediately below the cardiac orifice is indicative of carcinoma involving the cardiac end of the stomach. In either type of lesion it will be necessary to observe the patient on the horizontal table, in the prone and in the supine position accurately to delineate the defect and to confirm or rule out the existence of one or the other. Infrequently the barium will be held in the fundus of the stomach for an interval, and later commence to empty in a thin narrow stream; this is known as a cascade type of stomach or "the cup and spill" form of deformity, as Barclay has named it. It is a spastic phenomenon, and may be associated with distention of the colon by gas, large extrinsic tumors, or ascites, and in the majority of cases will pass following a short period of relaxation. Reexamination after administration of an antispasmodic substance may be necessary in the rare case to straighten out the stomach and to restore the normal contour.

Benign gastric ulcer is most commonly characterized by a projection from the boundary of the shadow representing the barium-filled crater of the ulcer, usually on the lesser curvature. The "niche," as it has been designated, is continuous throughout with the boundary of the shadow, and if the rugæ can be visualized they show a tendency to converge toward the lesion. This description applies to perforating ulcer; occasionally a perforated ulcer is seen in which the crater is beyond the boundary of the shadow; with the patient in the upright position it may even reveal a small air bubble above the fleck of barium. This is spoken of as the accessory pocket, and represents an ulcer that has perforated into the contiguous structures. An incisura, indenting the greater curvature of the stomach, is often associated with gastric ulcer, and may vary from a shallow indentation to one sufficiently deep

almost to bisect the stomach, causing hour-glass deformity. Prepyloric narrowing is frequently seen with ulcer on the lesser curvature. Carcinomatous ulcer tends to be flatter than benign ulcer and to have a wider base. "In a general way, ulcers project as an addition to the gastric cavity, whereas carcinomas encroach on the gastric lumen." Whenever the base of an ulcer exceeds 3 cm. in diameter the ulcer is likely to prove cancerous. In some cases it is possible, by palpatory manipulation, to demonstrate a crater which has the appearance of a converging meniscus lens, bordered by a zone of absence of the contrast medium; this has been designated as the meniscus ulcer. Carman, in the revised edition of his book, published in 1920, stated: "There is a small percentage of cases in which the roentgenologic distinction between benign and malignant ulcer is impossible. At operation the lesion is macroscopically an ulcer and only microscopic examination can give final judgment. A small cancer may have an incisura as its sole index. Some ulcers of the stomach are malignant. Whether they start as malignant ulcers or change from benign ulcer to cancer, no one knows. Consequently, the medical treatment of gastric ulcer on the one hand, and procrastination against surgery by the patient and physician on the other, may occasionally deprive the patient of the only chance for cure." Subsequent experience in the clinic has proved that there is a small group each year in which the roentgenologic and even macroscopic appearances are those of benign ulcer, but microscopic examination reveals carcinoma. The pathognomonic characteristic of carcinoma of the stomach is the solution of the continuity of the contour seen whenever the contour can be brought into relief. There is sharp demarcation of the normal from the abnormal, and in the region involved by the tumor the contour is markedly narrowed and irregular and the edge has a keen appearance. If one can visualize a knife blade, the cutting edge is the simulant of carcinoma and the back of the blade is that of the normal and the benign lesion.

Seventy per cent of all gastric carcinomas occur in the pyloric end of the stomach and these are predominantly of the scirrhus and the mucoid types. Fungus carcinoma more commonly involves the walls of the stomach, producing multiple, irregular, filling defects as a result of masses of tumor pro-

jecting into the gastric lumen and indenting the contrast medium. The margins of the filling defects in the fungus carcinomas have the same irregularity of outline and keenness of edge as the other two types. Rarely, the fungoid carcinomas will produce large filling defects on the greater curvature. Filling defects of various form are seen comparatively frequently on the greater curvature in roentgenograms. Roentgenoscopic examination with palpatory manipulation will reveal the great majority to be pseudodeflects from colonic or other extraneous pressure. True filling defects, deforming the greater curvature, are rare, so interpretation of lesions involving the greater curvature should seldom, if ever, be made on roentgenographic evidence alone. Benign tumors of the stomach are rare, their pathognomonic characteristic is a smooth-margined filling defect and retention of the continuity of the contour at any and all angles and planes of observation. Polypoid carcinomas may show all the characteristics of benign tumors when ulceration of the tumor is absent. Therefore, all interpretations of benign tumor should be qualified with the statement "possibly malignant," and surgical intervention is indicated whenever situation and extent of the involvement indicates operability of the lesion. Extrinsic masses may project into the gastric lumen by pressure on the gastric wall and simulate very closely the roentgenologic signs of benign intrinsic tumors.

The operability or nonoperability of carcinoma of the stomach depends on the extent of the involvement of the lesser curvature and the habitus of the patient. The greater the distance from the incisura angularis toward the cardiac end of the stomach, the less chance there is of the surgeon being able to get above the lesion. In the hypersthenic (short, heavy) type of person the stomach on the whole is less accessible than it is in the hyposthenic (long, thin) type. Occasionally the lesion might be operable from this angle, but fixation of the involved portion, suggesting perforation or extension to contiguous structures, might place it in the inoperable class. Hour-glass deformity may result from carcinoma of the stomach, and has a tendency to be of the "dumb-bell" variety. The characteristic sharp demarcation of the margins, and the keen-edged appearance of the involved portion, lend it distinguishing features. A diffusely infiltrative

type may involve the whole stomach, stiffening the walls and narrowing the lumen markedly; this is "leather-bottle stomach," or "linitis plastica." It is generally accepted as carcinomatous and inoperable. The pylorus gapes, and the contrast medium passes rapidly into the duodenum and small bowel. This type, as is also the scirrhus type, is often closely simulated roentgenologically by syphilis of the stomach. Syphilis never exhibits the sharp demarcation at the edges, and lacks the keen-edged appearance in the involved portions. The same may be said of the hour-glass deformities. A clinical note of differential value is the well-being of the patient, which, in the presence of syphilis, is usually out of all proportion to the extent of the involvement of the stomach. The therapeutic test is of value in retaining the hope of the patient, and nothing has been lost if the course of the disease proves the lesion to be carcinoma. When the pyloric portions are involved by carcinoma, the shadow tends to come to a sharp point, whereas in syphilis more of the lumen is retained or the shadow is globular at its extremity.

The pylorus offers many problems to the roentgenologist. I have said practically nothing of the secondary signs of the various lesions. Some of these are helpful in differential diagnosis, but none is characteristic of a single lesion. All have been overstressed by many observers who have accorded little if any attention to pathognomonic characteristics. The secondary signs have been the substance of verbose reports that have proved "much ado about nothing" to referring physicians and surgeons, and have done much to deprive roentgenology of the appreciation it deserves. Obstruction, or rapid emptying, are merely results of alterations of the pyloric opening by disease or reflex factors. Hypertonicity and hyperperistalsis are stimulated in an attempt to overcome obstruction. Long continued obstruction may wear out the musculature, and hypotonicity, dilatation and retention may result. It is important to determine whether the obstruction is from organic causes or whether it is the result of reflex action. It is infinitely more important to decide whether the lesion is on the gastric or the duodenal side of the pyloric ring.

Lesions on the gastric side are frequently malignant and many more are potentially malignant; surgical intervention is impera-

tive in many cases, and in the group as a whole has produced the best end-results. Lesions on the duodenal side of the pyloric ring are preponderantly benign, and operation is indicated only in selected cases. Peristalsis is absent in regions involved by carcinoma; it is present, although sometimes altered, in regions involved by benign lesions. Retention is seen as a result of both malignant and benign lesions; it is seen as a zone of decreased density of the contrast medium at the pyloric ring. Loss of time and waste of effort result from an attempt to examine a patient who has evidences of marked retention. By placing the patient in the horizontal, prone position, slightly turned on the right side for a varying length of time, emptying will be established and visualization of the pyloric segment will be possible. The lesion can be accurately located and its type determined in the majority of cases. A normal contour of the pyloric antrum with peristalsis passing to the ring, establishes the fact that the lesion is on the duodenal side. If the lesion is on the gastric side, the following conditions may be considered: carcinoma, syphilis, gastric ulcer, hypertrophy of the pyloric muscle, hypertrophy of the gastric mucosa, benign tumor, and prepyloric gastrosplasm. The characteristics of carcinoma and syphilis have been described. Gastric ulcer may involve the pyloric segment, and detection of the niche will establish the diagnosis. Ulcer of the lesser curvature frequently is the cause of prepyloric gastrosplasm, and when it is present, and an ulcer has not been visualized, the roentgenologist should carefully reexamine the curvature for the niche that may have been overlooked. Occasionally a similar deformity occurs as a reflex effect of disease of the gallbladder or appendix. Hypertrophy of the pyloric muscle may produce a smooth margined, tortuous deformity of the pyloric antrum, and concomitant partial invagination of the muscle into the base of the duodenal bulb has recently been reported by Kirklin and Harris as characteristic of this lesion. Hypertrophy of the gastric mucosa may produce irregularities of contour and multiple small defects in the shadow of the contrast substance.

Polyposis rarely involves the stomach; when it does, its roentgenologic appearance suggests a bunch of grapes in the defects in the shadow of the contrast substance. Small, pedunculated tumors may arise on

the gastric side of the ring, and may be extruded into the duodenum; these may deform the antrum and cause a filling defect in the duodenal shadow.

The pathognomonic characteristic of duodenal ulcer is the opposite of that of gastric ulcer. In gastric ulcer the niche projects from the boundary of the shadow; in duodenal ulcer, an incisura indents the boundary. In a proportion of duodenal ulcers one can visualize a niche, but not sufficiently often to make it reliable as a diagnostic sign. In the majority of ulcers that cause a niche there will be a concomitant deformity of the cap; rarely, with the aid of palpatory manipulation, can a roentgenologist approximate the walls of the duodenum and elicit the barium-filled crater of an ulcer in a cap without evidences of deformity. In cases of recurrent ulcer, the presence of a niche is the only reliable roentgenologic sign of the lesion. Duodenal ulcer involves the first portion of the duodenum almost exclusively. The incisura involves the first 3 cm. beyond the pyloric ring. The margins of the incisura should parallel one another in duodenal ulcer. The incisura may be unilateral or bilateral, so shallow as almost to escape detection, or so deep that it bisects the cap. Experimentally, it has been demonstrated that ulcers occur and heal rapidly. Study of material obtained at necropsy revealed multiple small, cobweb-like cicatrices throughout the duodenum in cases of old, chronic ulcer. These findings explain the many bizarre deformities seen in the duodenal cap, the most extreme of which are almost complete obliteration of all evidence of the first portion of the duodenum. There is definite shortening of the distance from the pyloric ring to the ampulla of Vater, and cicatrization frequently produces unilateral or bilateral pouching. Retention of contrast substance in one of these pouches may be misinterpreted as a diverticulum. True diverticula occur in the region of the ampulla of Vater. Clinically they are of little significance. Remnants of barium in one of the pouches may be misconstrued as the niche of a perforating ulcer. The number of apparent deformities seen in roentgenograms, but proved on reexamination roentgenoscopically to be artefacts, proves conclusively the futility of attempting to make a diagnosis of duodenal ulcer by the roentgenographic method alone. Diffuse duodenitis is a distinct pathologic entity. When there is ede-

ma and thickening of the walls, the characteristic cap-like deformity may be present, whereas a feathery irregularity of the contour of the cap is visualized roentgenoscopically, and the contrast medium passes on rapidly, suggesting extreme "irritability" of the duodenum. Each year, in a small group of cases, duodenal ulcer and gastric ulcer have been found to coexist. Rarely have duodenal ulcer and carcinoma of the stomach been noted in the same case.

In examination of the esophagus by the special technic described, diverticulum is characterized by a smooth-margined dilatation at the pharyngo-esophageal juncture (the introitus) varying in size from 5 mm. to more than 10 cm., and having the distinguishing feature of emptying from the top. With the patient turned to the required angle, the contrast medium will be seen to spill over and run parallel to the expanded shadow around and below the diverticulum. Diverticulum in the lower part of the esophagus is seldom seen; it presents the same roentgenologic characteristics, however. Cardiospasm usually involves the esophagus at or near the cardiac orifice of the stomach, and causes a smooth-margined dilatation which empties through a narrow constriction at its lower extremity. There may be tortuosity of the lower segment, but the smooth margin persists. Strictures are the result of healed ulcer, either simple, tuberculous, or syphilitic, or of trauma, such as results from drinking caustic liquids. The caliber of the esophagus may vary widely, according to the amount of cicatrization and according to the presence or absence of obstruction. Stricture may simulate almost any of the other lesions, but the contour will be retained throughout and will be smooth-margined, although often tortuous, and it empties at its lower extremity. Carcinoma usually involves the middle third of the esophagus and exhibits the characteristic demarcation at its margins, with the keen-edged appearance of the involved portion. The constriction is usually marked, and the amount of dilatation above is variable. Foreign particles of food may obstruct the esophagus and occasionally will simulate carcinoma in their roentgenoscopic and roentgenographic appearance.

Lesions of the small intestine are best demonstrated by the administration of a barium meal, with frequent observation in the first hour after its ingestion. This pro-

cedure is indicated for lesions above the middle section of the ileum.

Lesions of the large intestine are most satisfactorily studied by rectal injection of the contrast medium under fluoroscopic control, with palpatory manipulation of the intestine synchronously with the advance of the opaque substance toward the cecum and ileocecal valve. In early chronic ulcerative colitis, the evidence may be entirely in the rectum; roentgenoscopy has some advantages over proctoscopy when eliciting this evidence; otherwise, proctoscopy is preferable in examination for lesions of the rectum.

Carcinoma is the lesion of the colon most commonly encountered. Any portion of the large intestine may be involved. As in the stomach, any of three types may be present: (1) the scirrhus or fibrous type, characterized roentgenologically by the napkin-ring filling defect, sharp demarcation at both extremities, and a narrow, fibrous connecting strand; (2) the polypoid type, in which lobulated, cauliflower-like masses project into the lumen and displace the contrast medium, producing a mottled shadow of lesser density, and (3) the mucoid type, which also reveals the sharply defined dissolution of continuity of the boundary at each extremity, with irregularity and narrowing somewhat similar to that of the scirrhus type, but of greater length and less definition. This third type often will coincide in situation with a palpable mass. Diverticula are frequently seen as small lobulations projecting from the shadow of the contour. Diverticulitis is confined to the sigmoid, and presents a spindle-shaped shadow, the edges of which are serrated on account of the associated spasm and an inflammatory condition of the wall.

Ulcerative colitis of three types is seen: (1) the diplostreptococcic, ordinarily termed chronic ulcerative colitis; (2) the tuberculous type, and (3) the amebic type. Chronic ulcerative colitis commences in the rectum and involves the colon progressively toward the cecum, as a diffuse, symmetric narrowing of the intestine together with diminished mobility and flexibility. The haustral markings are completely obliterated, the colon is definitely shortened, and the splenic and hepatic flexures have disappeared. The contours may appear uneven, fringed, or feathery, owing to extensive destruction of the mucosa, or they may appear mottled as

the result of extensive, diffuse polyposis. In the early stages, the only roentgenologic evidence of the lesion may be local or generalized increase in intestinal motility expressed by hyperirritability of the colon.

Tuberculous ulcerative colitis commonly involves the ileocecal region, near the ileocecal valve, or the cecum and proximal segments of the colon. Roentgenologically, the features are narrowing, hyperirritability and obliteration of mucosal relief with shortening of the segment. The shadow tends to be ragged, with irregularly arranged, jagged prominences and depression. Hyperplastic tuberculosis is often primary in the intestine, is definitely a granulomatous, tumefactive process, and is confined to a relatively short portion of the intestine, usually the ileocecal coil, and is formative rather than destructive. It should be distinguished from neoplastic and other forms of granulomatous involvement rather than from any of the types of chronic ulcerative colitis.

Amebic colitis most commonly involves the cecum and proximal segments of the colon; secondary sites of preference are dependent portions of the intestine. The ileum is practically never involved, although the cecal aspect of the ileocecal valve is often involved; this results in a gaping orifice, due to stiffening of its lips. Obliteration of the haustral markings, shortening, and narrowing, sometimes to almost complete closing of the lumen, have been constant in the cecal segment. Slight manipulation of the ileocecal coil when moderate distention of the cecum is present usually will result in reflux into the terminal portion of the ileum. The roentgenologic aspect of amebic colitis is one of diminished intensity and severity in comparison with that of the other types of chronic ulcerative colitis.

Polypoid lesions of the colon include all sessile or pedunculated growths projecting into the intestinal lumen. Early diagnosis and removal of these is important because of their known tendency for the development of malignant characteristics. Their site of predilection is the rectum and the distal segments of the colon. Roentgenologically they are distinguishable by characteristic mottling, produced by multiple central polypoid projections into the lumen, displacing the contrast medium and creating filling defects in its shadow. Their recognition has been materially aided by adoption of the double contrast method first introduced by

Fischer, and developed in this country by Weber. Thoroughly efficient preparation is a prerequisite to success with this method. After examination by means of the opaque enema, the patient is allowed to evacuate the enema and air is introduced under roentgenoscopic control. If evacuation has not been sufficiently complete, the air will sometimes induce further emptying. Enough of the contrast medium will have adhered to the walls of the colon to allow visualization of its intraluminal appearance and to bring into bold relief the outlines of polypoid masses or other lesions. Stereoscopic roentgenograms afford more leisurely study of the details, and an opportunity for consultation by the roentgenologist, the referring physician and the surgeon. In most lesions of the colon this double contrast method seems to offer a real advance in visualization, and reproductions of these roentgenograms for publication have a quality of detail equal to the finest drawings.

A consideration of the diagnosis of gastro-intestinal lesions would not be complete without some reference to cholecystography in the visualization of pathologic changes in the gallbladder and gallstones. Oral administration of the dye at The Mayo Clinic has been satisfactory in every respect. The sodium salt of tetraiodophenolphthalein, 4 gm., freshly dissolved in 30 c.c. of distilled water, mixed with one glass of grape juice, orange juice, or carbonated mineral water, is taken immediately after a meal that is eaten at the usual hour in the evening. This meal should be substantial, reasonably free of fats, and fats should be withheld subsequently until the gallbladder has had opportunity to fill with dye-laden bile and to concentrate its content. During the period of the examination, the patient should not take any purgatives or any medicines which affect the digestive tract. Breakfast is not allowed, but water, black coffee, or clear tea is permissible. The first set of roentgenograms is made at 8 a. m., and the second set at 10 a. m. The patient is then instructed to take the usual noon meal, but to include with it a glass of milk and cream in equal parts, and to return for the third set of roentgenograms at 1 or 2 p. m. Painstaking technic, particularly in the avoidance of movement of the patient, is a prime requisite. The roentgenographic formula is proportioned to the measured thickness of the patient's body. A target film distance varying from

25 to 28 inches (63 to 71 cm.), a kilovoltage from 70 to 95, and an exposure time of from a half-second to a second are employed, with a standard milliamperage of 80 and a flat Potter-Bucky diaphragm. Complete filling of the gallbladder in the first series of roentgenograms with deepening of the density of the shadow in the second series, and marked shrinking of the volume of the shadow in the third series is interpreted as evidence of a normally functioning organ. If throughout the series of roentgenograms there is a uniform lack of density in the visualized shadow of the gallbladder, with less shrinkage of the volume in the third series, the organ is reported as poorly functioning. The gallbladder may be visualized as a faint shadow that is of uniform density and volume in the films of all series; subsequent examination, without administration of the dye, may prove this to be a nonfunctioning gallbladder with retention, or with thickening and occasionally calcification of its walls. With good visualization of the margin of the liver, kidney and psoas muscle, with no evidence of a shadow in the gallbladder after administration of the dye, and with assurance that the patient has followed all instructions, the interpretation is that the gallbladder is not functioning. Gallstones of sufficient size and calcium content can be visualized as often as they were before the advent of the cholecystographic method. Cholesterol stones of sufficient size cause negative shadows, areas of decreased density in the homogeneous, flat shadow cast by the dye-filled gallbladder. In such cases, the findings are reported as evidence of a normally functioning, poorly functioning or nonfunctioning gallbladder with stones. Gas in the intestine overlying the gallbladder may simulate negative shadows, or may mask the evidence of stones in other shadows. Extraneous shadows, particularly small areas of calcification in the cartilage of the ribs, may offer difficulties in interpretation. Further examination is indicated in all such cases. Kirklin has been able to distinguish between small, negative shadows cast by stones and neoplasms of the gallbladder, particularly papillomas, adenomas, fibromas and myomas, in a considerable number of cases. The shadows of stones change in relation to the general contour of the shadow of the gallbladder, particularly in the third series of roentgenograms. The position of shadows of neoplasms does not

change. Correlation of the cholecystographic observations with the findings in all cases in which operation is performed, and in which inspection of and report on the gallbladder was feasible, has established the fact that the lack of appearance of the shadow of the gallbladder is the most accurate of all the diagnostic signs of cholecystic disease; that in experienced hands the diagnosis of poorly functioning gallbladder as evidence of structural change in the gallbladder is accurate to a high degree; and that the diagnosis of normally functioning gallbladder is the least accurate from the comparative standpoint, but still infinitely more reliable than any other method known.

In this brief summary of the salient points in roentgenologic diagnosis of diseases involving the gastro-intestinal tract, I have purposely stressed the pathognomonic, direct signs and have omitted largely the inclusion of secondary signs. I have given the findings by the roentgenoscopic method. Roentgenoscopy has proved, in experience at the clinic, to be the most rapid, most accurate, and at the same time the most economical, of any single diagnostic method. Examination with the aid of the fluoroscopic screen allows the patient to be turned to any desired angle, in the vertical or the horizontal plane, and palpatory manipulation synchronous with the ingestion of the contrast medium allows approximation of the walls and detection of lesions that might easily be missed in roentgenographic examination alone. Roentgenoscopic examination eliminates misinterpretation of artefacts which have the appearance of filling defects, niches and incisuras. True lesions can be demonstrated by persistence of the evidence in repeated examinations at all angles and in all planes under palpatory manipulation. A minimal number of roentgenograms are made to check the roentgenoscopic findings, and to provide tangible evidence of the lesion for more comprehensive consultation and as a permanent record. Comparison of roentgenographic with roentgenoscopic findings in large series over a considerable period have proved conclusively the fallibility of the roentgenographic method alone. It has proved advisable for the roentgenologist not to have intimate knowledge of the clinical history at the time of his examination, and for correlation of the roentgenoscopic and roentgenographic with the clinical findings to be effected later. The roentgenolo-

gist approaches the examination without prejudice and forms opinions on the basis of observation only. When there is disagreement in the correlation of the roentgenologic with the clinical and with the other laboratory findings, roentgenologic examination is undertaken again, with special effort to elicit or eliminate the lesion suspected. Of a large series of patients, carefully selected by highly trained clinicians as giving evidence of potential gastro-intestinal disease, approximately 70 per cent were negative roentgenologically. The conclusion must be that in the routine material of the average practitioner this percentage inevitably would be higher. Apparently gastro-intestinal symptoms, by far most often, have a functional basis. Although the superiority of the roentgenologic method is recognized, physicians never lose sight of the utility of other methods. The roentgenologist must share the burden with his colleagues; the combined effort of all must be to serve the best interests of the patient.

BIBLIOGRAPHY

1. Becher, Wolf: Zur Anwendung des Röntgen'schen Verfahrens in der Medicin. *Deutsch. med. Wchnschr.*, 22:202-203 (Mar. 26), 1896.
2. Cannon, W. B.: The movements of the stomach studied by means of the roentgen rays. *Am. Jour. Physiol.*, 1:359-382, 1898.
3. Carman, R. D.: The roentgen diagnosis of diseases of the alimentary canal. Philadelphia, W. B. Saunders Co., 1917, 293 pp.
4. Faulhaber: Zur Röntgendiagnostik des tiefgreifenden (kallösen) Ulcus ventriculi. *München. med. Wchnschr.*, 2:2073-2077 (October), 1910.
5. Ghent, Percy: Roentgen. A brief biography. Toronto, The Hunter-Rose Co., Ltd., 1929, 28 pp.
6. Haudek, Martin: Zur röntgenologischen Diagnose der Ulzerationen in der Pars media des Magens. *München. med. Wchnschr.*, 2:1587-1591 (July), 1910.
7. Hemmeter, J. C.: Neue Methoden zur Diagnose des Magengeschwürs. *Arch. f. Verdauungskr.*, 12:357-363, 1906.
8. Holzknecht, Guido: Zum Haudekschen Symptomenkomplex des penetrierenden Ulcus. *München. med. Wchnschr.*, 1:314 (February), 1911.
9. Kirklin, B. R.: Cholecystographic diagnosis of neoplasms of the gallbladder. *Am. Jour. Roentgenol. and Radium Therap.*, 29:8-16 (January), 1933.
10. Kirklin, B. R., and Harris, M. T.: Hypertrophy of the pyloric muscle of adults: a distinctive roentgenologic sign. *Am. Jour. Roentgenol. and Radium Therap.*, 29:437-442 (April), 1933.
11. Reiche, F.: Zur Diagnose des Ulcus ventriculi im Röntgenbild. *Fortschr. a. d. Geb. d. Röntgenstrahlen.* 14:171-173, 1909.
12. Rieder, H.: Radiologische Untersuchungen des Magens und Darmes beim lebenden Menschen. *München. med. Wchnschr.*, 2:1548-1551 (August), 1904.
13. Weber, H. M.: The roentgenologic demonstration of polypoid lesions and polyposis of the large intestine. *Am. Jour. Roentgenol. and Radium Therap.*, 25:577-589 (May), 1931.
14. Williams, F. N.: The roentgen rays in medicine and surgery as an aid in diagnosis and as a therapeutic agent. New York, Macmillan and Co., 1903, 793 pp.

PROGRESS IN THE CARE AND TREATMENT OF MENTAL DISEASES

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No branch of medicine has been so revolutionized during the last century as that of the treatment of mental diseases. Until well into the nineteenth century, mental disease was regarded not only as an incurable condition, but a disgrace rather than a misfortune. By some it was considered a Divine punishment for personal guilt, or the result of demon possession. In former centuries, as a general thing, nothing was done to relieve the condition of those so afflicted. They were, in fact, treated worse than the greatest criminals, being caged, chained, starved and beaten.

In 1547 the Monastery of St. Mary of Bethlehem in London was converted into an insane asylum, the name being contracted in common speech to "Bedlam." The fact that this term is now used to denote wild uproar and confusion indicates what were the conditions within its walls. The patients in Bedlam were made a public spectacle, like animals in a menagerie, visitors being allowed to inspect the patients on payment of a small fee. Thomas Bowen mentions that

this hospital had drawn two thousand dollars annually from visitors led by vulgar curiosity, who were willing to pay for admission to see the patients.

The same state of things existed in other European countries, the Lunatics' Tower being one of the show places of Vienna. Here also the public were admitted to view the patients on payment of a small fee.

The treatment of these poor unfortunates was no better in America than in Europe. The Pennsylvania Hospital, which opened in 1772 and received mental patients, experienced considerable difficulty on account of the annoyance of these patients by the public. Later the public was notified "that such

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persons who come out of curiosity to visit the house should pay a sum of money, a groat at least, for admittance."

Many of the mentally sick, if violent, were locked in the barns or sheds of county almshouses; or, if harmless, they were kept with the other inmates or sometimes auctioned off to the lowest bidder for pauper care.

The French physician Philippe Pinel is celebrated in medical history as the pioneer in the treatment of the mentally sick in a humane manner. On visiting them at Bicêtre in 1789 he was impressed with the disastrous state of affairs in this hospital, and when later he was put in charge he proceeded to inaugurate drastic reforms. In 1798 he released many of the patients from the mechanical restraints to which they had been subjected.

"It was," says Semelaigne, "a jubilee initiative of the reign of mercy. Eighty lunatics who had long been galled by chains were set at liberty. And it is mentioned that the very act of liberation, affecting the mind as other powerful impressions, restored many of them to tranquillity if not to sanity."

At about the same period, in 1794, the Quaker William Tuke built a home or "retreat" at York, England, where mentally sick persons might receive humane and reasonable treatment. This action was the result of abuse to which a young woman belonging to the Society of Friends was subjected during her confinement in the York asylum, where she died. Subsequent investigation revealed a most deplorable state of affairs.

The work nobly begun by Pinel and Tuke was continued in France by Esquirol and others, and in England by Gardner Hill, Conolloy, and others. In 1839, Conolloy, in the face of bitter opposition, discarded all mechanical restraints at the Hanwell Asylum, where 800 patients were confined. Seclusion and the padded room were substituted for the straight jacket and other mechanical restraints.

The Friends' Asylum for the mentally sick at Frankford, Pennsylvania, claims to be the first institution "erected on this side of the Atlantic in which a chain was never used for the confinement of a patient."

Virginia is entitled to the credit of being the first Commonwealth to furnish state care for mental cases and furnish adequate protection for them. The first institution de-

signed and used exclusively for mental diseases in this country was the Eastern State Hospital at Williamsburg, Virginia, opened in 1773.

Miss Dorothea Dix was, more than any other person, responsible for the inauguration of state care of the mentally sick throughout the United States. Undertaking in 1841 to give Sunday School instruction to the female inmates of the East Cambridge House of Correction, she found twenty women, among whom were several mentally sick, crowded together in one filthy room in which no provision was made for bedding or heat. Shocked at her discoveries, she set out on a tour of inspection, visiting jails and almshouses throughout the state of Massachusetts. She then memorialized the Massachusetts legislature, with the result that the existing asylum was enlarged to make provision for the mentally sick confined in jails and almshouses. Miss Dix is credited with having memorialized 22 different state legislatures on this subject, and to have been instrumental in the founding of no less than 32 asylums. State hospitals for the mentally sick are now to be found in every state without any exception.

The state hospitals were for a long period merely places for the custodial care of the mentally afflicted, rather than for the clinical study and treatment of mental diseases. Weir Mitchell in 1894 called attention to the absolute lack of scientific care of the mentally sick in American hospitals. "We have done with whip and chains and ill usage," he said, "and, having won this noble battle, have we not rested too easily with having made the condition of the insane more comfortable?"

The Psychiatric Hospital.—So great a change, however, has taken place since that day that at the present time the former "insane asylum" has become the "psychiatric hospital" operating on much the same lines as the general hospital. As Copp pointed out:

"The mental hospital and the general hospital are essentially alike. Mental factors predominate in the former, but are potent influences in the latter. The difference is one of degree only. All the imperative requirements of the one must be met by the other. They are supplementary agencies in alleviating and curing disease and must be eventually viewed in the same light and admin-

istered in the same spirit on even planes of humaneness and efficiency."

In harmony with this ideal, the requirement for mental hospitals now includes "directors for clinical psychiatry, pathologists, internists, surgeons, dentists, and specialists of various kinds. Experts in hydrotherapy, massage and electrical treatments are necessary, as well as dietitians, industrial instructors, occupational teachers, specialists in re-educational work, psychologists, social workers, etc." They have long passed the stage of purely custodial care and have developed into highly specialized modern hospitals of the most advanced type.

Among the various causes that have led to the great reform movement in the treatment of mental cases, possibly the most important was the change of view with regard to the etiology of the disease, it being now recognized as a disorder of the body and brain that may be compared with other bodily ills, yielding to treatment along the same lines. The causative effect of physical disorders upon mental states is now clearly recognized, as well as the effect of the mental state upon the body. This interrelationship of mind and body and their effect one upon the other makes necessary the services of the psychiatrist in the general hospital and of skilled specialists in the treatment of bodily disorders in the mental hospital. "No hard and fast line can be drawn between the two."

For this reason, Dr. Franklin G. Ebaugh, of the University of Colorado, emphasized the necessity of combining a psychiatric outlook with a physical outlook and using this approach in all clinical work. "When the present-day expectations of psychiatric teaching are realized," says Dr. Ebaugh, "we can expect that the general practitioner and internist will have skill and interest in the early recognition of mental disease, that the school physician will have, in addition to his ability to diagnose and treat rickets, an equal ability in the recognition of personality disorders in children, and that every student will leave the medical school with a workable understanding of the clinical and therapeutic and public health aspects of mental disorders."

It being recognized that a mental disorder may be partially or entirely due to physical causes, the removal of which will clear up the mental disturbance, some states now have "observation clinics" in which pa-

tients are kept for a time before commitment. The patient is carefully studied from every point of view, given a thorough physical examination with the necessary x-ray work and laboratory tests, dental and visual defects corrected and all foci of infection sought for and removed if possible. Pope has emphasized the importance of focal infections as a cause of mental aberrations, and the almost magical clearance of the mind which the removal of these foci may occasion, and since many borderline nervous or mental defects can be readily alleviated by a short period of study and treatment, actual residence in a hospital for mental diseases is often avoided. This is of special importance in view of the fact that, although there has been some progress in breaking down prejudice with regard to abnormal mental states, much still remains to be overcome. The popular notion still persists to some extent that mental illness is more or less of a disgrace, and commitment to a state hospital under legal restriction leaves a stigma that remains even after the recovery and release of the patient.

New regulations have recently been made in England to save sufferers from mental disorders from the still existing prejudice. The Mental Treatment Act aimed at putting the treatment of mental disorders on the same footing as the treatment of bodily disorders, with out-patient clinics, observation wards for early cases, and, more especially, the development of the "voluntary patient" system. It has been possible since the working of the Act for patients to be received in any public or private mental hospital without certification or reception order. A further novel feature of the new method is the "temporary patient" system whereby patients incapable of volition and likely to benefit by temporary treatment are also admitted to mental hospitals without certification. Consequently they are under no legal restriction or disability, as is the case with certification for commitment to a mental hospital. Similar arrangements obtain in many of the hospitals of our own country.

How different and how much more humane and effective are our present day methods of the care and treatment of those who are mentally ill!

Space will not allow here a detailed description of the examination and treatment of all the different forms of mental diseases. The following is a brief outline of the

methods of examination and treatment usually followed by the writer.

Methods of Examination.—The physician should approach all cases of mental illness "psychobiologically." The examination of patients naturally divides itself into two parts: (1) the physical examination; and (2) the examination of his mental condition.

In the first place, a careful history of the case should be obtained. The family history should be carefully inquired into, particularly with reference to any nervous, mental or constitutional disorder in his ancestors or blood relatives.

The patient's past history should be carefully inquired into to look for any previous acute or chronic illness. The presence of any infectious diseases, either acute or chronic, should be carefully looked for, especially any syphilitic infection. Careful inquiry should be made as to whether or not the patient has had any previous attacks of any kind of mental disorder or a history of a so-called "nervous breakdown." In some forms of mental illness, such as the manic depressive psychoses for instance, the patient may have had previous attacks from which he has recovered.

The present complaint of the patient both as to any physical ailment that he may have as well as his present mental illness, time of onset and a statement of the leading symptoms in the order of their occurrence and severity, should be recorded, also history of any injuries to the head at any time, including injuries at childbirth.

Following the history-taking as above outlined, the patient should have a physical examination of all of the organs of the body. Special attention should be given to the examination of the head as to shape or asymmetry, scars on scalp, tenderness on pressure, x-ray of the head when indicated as to condition of cranium, deformities, sella turcica, sinuses and mastoid, any history of purulent discharge from ears, examination of nose, throat and sinuses for any infection, inflammation or other troubles. A culture should be made from the throat and tonsils when indicated. Also an examination of the mouth including tongue, teeth, and x-ray of teeth should be made when indicated.

A careful examination of all of the other organs of the body should be made. It is

not necessary here to enter into a detailed description of this. It is also important to make careful laboratory examinations of all of the different secretions, excretions and fluids of the body, including the regular blood count, differential blood count, chemistry of the blood, metabolism test, serological examination of the blood, and in certain cases of the spinal fluid, particularly for any evidence of syphilis or any other organic disease of the nervous system.

A neurological examination should be recorded under a separate head. It is important to have a regular plan and order of making the examination so that no points will be overlooked. It is well to begin at the top and work downward. In this examination inquiry should be made as to headaches; their location, character, and cause should be sought for, also the length of time the patient has suffered with them. There should also be inquiry as to the following symptoms: Dizziness, heaviness, or any other peculiar feeling in the head, character and amount of sleep, and physical endurance. Inquiry should be made for any worries or any emotional depression or failure in memory. Details of these should be worked out more fully in the mental examination. Examination of the special senses should be made. The acuity of vision, errors of refraction, diplopia and nystagmus, condition of the pupils, whether equal, unequal, or irregular in outline and their response to light and accommodation should be recorded, and an examination of the fundi oculi. The ears also should be examined as to acuity, diminution or loss of hearing, also in certain cases an examination of the vestibular apparatus and labyrinth of the inner ear. The condition of smell and taste, mastication, deglutition and speech should all be examined. Observation should be made as to the patient's gait, posture, and movements, and any abnormalities recorded. Observation should be made for any abnormal movements, paralysis, ataxia or incoördination of any movements or muscles of the body, and strength of the paralyzed muscles carefully tested with the dynamometer. The deep and superficial reflexes should be examined and a record made of any pathologic reflexes. Cutaneous sensations should be carefully tested for touch, pain and temperature impressions, also deep sensibility including vibratory sense, joint sense and muscle sense, also the presence, location and

character of pain or paresthesias or any other abnormal sensations.

Mental Examination.—A single mental examination or observation is not sufficient in every case. In some cases it is necessary for the physician to make several observations at different times. It is not always best, especially in certain cases, to arrive at a positive diagnosis until the patient has been under observation a sufficient length of time for him to exhibit all of his different symptoms.

In making the mental examination a definite outline should be followed which takes into account all the mental symptoms, behavior and conduct of the patient so that nothing will be missed. In some cases, particularly in cases of children and in patients who are mentally retarded, a psychometric test should be made and the patient's intelligence quotient determined. In some cases a psychoanalysis should be made.

Treatment.—There is probably no department of medicine that has made greater progress than has been made in the care and treatment of patients suffering from mental disorders. A great deal more can be accomplished by our modern methods of treatment than was formerly believed possible. In the treatment of these cases careful supervision as to all details is necessary. The location of buildings where they are confined is very important, and should be so constructed as to give the patient the greatest amount of physical comfort. The room should be well ventilated, well lighted and cheery, the furnishing neat and adequate for comfort, and the decorations, etc., should not be in any way depressing. The buildings should be in a healthful location, the surrounding pleasant, and the grounds ample. The grounds should contain trees, shrubbery and flowers, and should be made attractive in every way. Sometimes the patients can be placed in a ward with others, but very often it is better to have them in private rooms.

The treatment of the patient may be divided into two parts: (1) the treatment of physical ailments; and (2) special mental or psychologic treatment. These two, of course, can proceed at the same time.

(1) *Physical Treatment.*—The treatment of any physical ailments that the patient may have would, of course, be indicated by the examinations that have already been made. It is very important that all

sources of toxemia and infection be removed. For this reason, as formerly stated, the patient's nose, sinuses, teeth, alimentary tract, including the gall bladder and genitourinary system, should all be carefully examined for any possible infection or the source of any toxemia. The alimentary tract especially should have careful attention. The teeth should be well cared for and a toothbrush used after each meal, and some antiseptic mouth wash used to keep the teeth and mouth clean. The services of a dentist, of course, should be used whenever indicated. It is very important that the patient's diet be carefully regulated so that the blood is kept normally alkaline and he should have the requisite vitamins, and the food elements in the right proportion to nourish his body and to help him gain or reduce weight as indicated. The regulation and control of the bowels and freeing the bowels of putrefactive bacteria are often very important in cases of mental illness.

Probably in no department of medicine is the use of the various forms of physiotherapy more effective than in the treatment of mental disorders. The different forms of hydrotherapy, electrotherapy, heliotherapy, massage, outdoor exercise, special exercises under a medical director, rest, and all of the different forms of physiotherapy, can be used in the treatment of mental disorders to the very best advantage. These different remedies, of course, should be selected according to the needs of the patient and should be directed by the physician and carefully applied by the nurse or attendant. A great deal of skill may be shown on the part of attendants in the administration of the different forms of physiotherapy and the results obtained very often depend to a large degree on the manner in which the different treatments are applied to the patient. Cases that may be suffering from any form of syphilis should, of course, have proper antisiphilitic medicinal treatment.

The use of drugs, especially sedative drugs and hypnotics, may sometimes be necessary in the treatment of these cases, but the writer has been using the above mentioned physical remedies in the treatment of a large number of these cases and resorting to hypnotics or sedative drugs has very seldom been necessary.

(2) *Mental Treatment.*—In order that the mental treatment may be carried out successfully, it is very essential that the phy-

sician should have a thorough understanding of the patient's mental condition, and as far as possible of his feelings and emotions. In other words, he should understand his patient. Many sufferers from mental disorders are misunderstood by their friends. They very often look well, and it is difficult for the friends to understand how they are suffering. They think that if they will only just snap out of their trouble they will be all right. In many cases this snapping out of trouble is quite impossible on the part of the patient and he needs the help of the physician and nurse to get readjusted. A physician who can enter into the patient's feeling and have an understanding of his mental state is the one that can give him the most help. It is always necessary that the physician take considerable time to interview and converse with his patient and endeavor to correct any erroneous ideas, and to counteract his emotional depression or the opposite,—emotional exaltation, overactivity, etc.—whenever present.

In the treatment it is a good plan for the physician to have a very definite daily program for the patient to follow. This should include the different forms of treatment, periods of exercise, periods for rest, and everything that might be considered a part of the patient's daily program. In applying what might be considered the mental treatment, of course, many of the other physical remedies that may be used in treating the patient will also have their mental effect and really become part of the mental treatment of the patient. Occupational therapy by which the patient is directed to do certain definite things or make certain articles often forms an important part of the mental treatment of the patient and is very valuable in certain cases.

In certain cases a psychoanalysis may be necessary. It is important for the physician to select and determine the particular cases that might be benefited by such a treatment, as in many cases of mental disorder a psychoanalysis is not indicated and would do no good, while in others it might accomplish much good. Selection of a proper nurse for the care of these patients is also very important. The nurse should have special training in the care of such cases. As far as possible nurses should be selected that are adapted to the needs of each particular case, as mental cases differ, and a nurse that might be adapted to one case would not fit well into the needs of another.

The methods outlined have been used by the writer for many years in the treatment of a large number of patients suffering from mental disorders. They have been modified and changed from time to time as seemed indicated by the advancement of our experience and knowledge. The writer has found that the proper use of the above mentioned methods and remedies gives excellent results in the treatment of patients suffering from different forms of mental illness. Many cases can be definitely cured and others which may not be cured can be greatly benefited and made more comfortable.

BIBLIOGRAPHY

1. Copp, Owen: Barriers to the treatment of mental patients. *Mental Hygiene*, April, 1918.
2. Ebaugh, E. C.: Some present-day trends in the teaching of psychiatry. *J. Nerv. & Ment. Dis.*, April, 1931.
3. Garrison, Fielding H.: *History of Medicine*. Philadelphia, W. B. Saunders, 1929.
4. Haggard, H. W.: Dorothea Dix. *Bull. Wayne Co. Med. Soc.*, July 26, 1932.
5. Hincks, C. M.: What mental and general hospitals can learn from each other. *Mod. Hosp.*, 37:57, 1931.
6. Hurd, Henry M.: *The Institutional Care of the Insane in the United States and Canada*. Baltimore, Johns Hopkins Press, 1916-1917.
7. May, James V.: *Mental Diseases*. Boston, The Gorham Press, 1922.
8. Mitchell, S. Weir: Address before the Fiftieth Annual Meeting of the American Medico-Psychological Association, Transactions, 1894.
9. Norman, Hubert J.: Some factors in the reform in the treatment of insane. *Proc. Roy. Soc. Med.*, June, 1931.

CHRONIC NONSPECIFIC ARTHRITIS: ETIOLOGY AND TREATMENT, WITH ESPECIAL REFERENCE TO VACCINE THERAPY

BENJAMIN H. ARCHER, New York, believes that there appears to be a basis for the concept that both rheumatoid arthritis and osteo-arthritis are due to the same etiologic agent or group of agents and that the proliferative and degenerative pathologic changes by which the two types manifest themselves are the result of other factors than those of causation. There seems to be no conclusive evidence of the presence of streptococci in the blood and joints of patients with chronic arthritis. None of the vaccines employed at the present time in the treatment of chronic arthritis have been accepted by the Council on Pharmacy and Chemistry. There is no evi-

dence at hand that they exercise any specific effect on the course of the disease. Dietary regulations and vitamin therapy apparently exercise no specific effect on the joint manifestations of patients with this disease. In those cases associated with foci of infection it seems wise to search for and remove this factor early in the course of the disease. In advanced cases the measures that the author has found to be of greatest benefit to the patient are orthopedic procedures, physical therapy, the administration of drugs to allay pain and a change of climate. Present knowledge of the subject does not seem to warrant the view that certain definite measures should be applied only to certain definite types of arthritis. There is no conclusive evidence that the same measures do not apply at some time to all forms of nonspecific arthritis.—*Journal A. M. A.* (May 5, 1934).

A SIMPLIFIED DIABETIC FOOD TABLE*

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There is general agreement that a knowledge of food values is essential to diabetic patients. Average individuals have little conception of the relative amount of carbohydrate in even the common articles of diet. Without such knowledge, persons having diabetes either live with no consistent diet restrictions, or are on more or less fixed formulæ. While the latter are preferable, such diets become very monotonous. This often stands in the way of strict coöperation and satisfactory results. Moreover, such prescriptions lack the desirable feature of easy adjustability.

Few doctors are able to outline a diabetic diet beyond the mere notation in grams of carbohydrate, protein, and fat. Some have not had the necessary training, and the others cannot afford the time required. For these reasons the information and way of applying it has, except for a few patients having unusual intelligence and leisure, been obtained from trained dietitians generally available only at the better hospitals. This bars many, for financial reasons, lack of time, or dread of hospitals, from ever availing themselves of the facts and instructions so essential to their continued well-being.

Many of the severe diabetic patients who take advantage of this training find the diet getting out of hand in times of stress. They lose confidence in themselves, look to the physician for help without its forthcoming, and so are hospitalized over and over for readjustment. Discouragement and depletion of funds often occur to exaggerate the seriousness of a situation, already difficult.

Those who have acquired the technic of setting up their own food prescriptions often find it time-consuming. When away from home the task may become impractical. In many instances this has led to abandonment of the calculated, weighed, or measured diet, and rapid loss of ability to resume it.

The generally accepted method of filling diet prescriptions and computing their value is not, except in wards devoted to research, sufficiently accurate to justify the expense, and time required by the average patient to master the details. Table I is a compilation from Atwater and Bryant's "The Chemical Composition of American Food Materials" showing the normal variation of carbohydrate, protein, fat, and water in common foods. It makes evident the errors which

may arise even with careful calculation and weighing of diets.

There is an evident need for simplified diabetic arithmetic and food tables. The method of prescribing a diet should be so simple that it could be done by any doctor in his office. Every patient who can read should be able to understand and execute it without the necessity of hospitalization. If such were the case fewer doctors would shirk their responsibility, and more persons having diabetes would be under supervision.

TABLE I.—VARIATIONS IN THE PERCENTAGE OF CARBOHYDRATE, PROTEIN, FAT, AND WATER IN SOME COMMON FOODS.

FOOD	C	P	F	W
Beef—cooked				
Roast				
Minimum		15.1	19.6	38.7
Maximum		29.0	41.4	59.5
Round Steak				
Minimum		19.4	3.3	53.5
Maximum		34.1	16.9	72.3
Egg—boiled				
Minimum		10.3	9.1	68.6
Maximum		16.8	14.4	79.9
Cottage Cheese				
Minimum		16.1	.4	67.0
Maximum		25.7	1.6	77.0
White Bread				
Minimum	47.6	6.8	.4	29.8
Maximum	58.0	11.0	3.5	40.4
String Beans				
Minimum	5.1	1.7	.2	83.5
Maximum	12.6	2.8	.4	91.7
Carrots				
Minimum	6.5	.7		83.1
Maximum	13.8	2.0	.7	91.1
Onion				
Minimum	4.2	.2	.1	81.5
Maximum	15.5	4.4	.8	95.2
Apple				
Minimum	8.8	.1	.1	77.3
Maximum	21.3	.8	1.4	90.9
Banana				
Minimum	16.3	1.0	.0	66.3
Maximum	29.8	1.6	1.4	81.6
Orange				
Minimum	11.6	.8	.1	80.0
Maximum	18.5	1.1	.3	88.3

*Read before the Kent County Medical Society, April 12, 1933.

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TABLE II (Continued)

FOOD		STANDARD PORTION		COMPOSITION		
		HOUSEHOLD MEASURES	GRAMS	C	P	F
Vegetables (fresh or canned without sugar)	20% Potatoes	$\frac{1}{2}$ average size	50	10	2.5	
	Baked beans	1 h. tablespoon				
	Green corn	1 h. " or $\frac{1}{2}$ ear				
	Shell beans	$1\frac{1}{2}$ tablespoons	15			
	15% Peas, parsnips, Lima beans, Jerusalem artichokes.	$\frac{1}{2}$ cup	70	10	2.5	
	10% String beans, pumpkin, turnips, beets, Kohlrabi, squash, carrots, onions.	1 cup	150	10	2.5	
	5% Tomatoes, Brussels sprouts, okra, leeks, Watercress, sea kale, cauliflower, globe, Broccoli, eggplant, artichoke, cabbage, Radishes, ---lettuce, cucumbers, spinach, Celery, asparagus, rhubarb, endive, Marrow, sorrel, sauerkraut, beet greens, Dandelions, mushrooms, Swiss chard.	2 cups	300	10	5	
Milk	Whole	1 glass	200	10	5	7
	Skim	1 glass	200	10	5	
	Butter					
Cheese	Cottage (skim milk)	2 tablespoons	30		5	
	Other types	$1 \times 1 \times 2$ inch piece	20		5	7
Egg		1	50		5	7
Gelatin		$1\frac{2}{3}$ teaspoons	5		5	
Shellfish			30		5	7
Fish (cooked)	Add $\frac{1}{2}$ tap. butter or fat per portion:	$1 \times 1 \times 2$ inch or $\frac{1}{4}$ cup	20		5	7
Meat and meat products (cooked)	Shellfish—all	$3 \times 2 \times \frac{1}{2}$ inch slices	20		5	7
	Fish—all except canned mackerel, sardines, and tuna					
	Pork—					
	Beef—					
	Mutton or Lamb—					
	kidney	kidney	kidney			
	liver	tripe	liver			
	lung	veal	lung			
	heart	dried				
		awetbread				
Fowl (cooked)	Chicken—					
	broilers					
Bacon (cooked)	giblets	$3 \times 2 \times \frac{1}{2}$ inch slices	20		5	7
Sausage (cooked)		4-6 strips	30		5	14
Nuts, etc.		4-6 small				
	Almonds, beech, cashew, filberts, peanuts, Hickory, pistachios, walnuts, (cocoa, chocolate)		20	5	5	14
	Brazil, butter		25		5	14
	Chestnuts, lichi		15	5		
	Cocunut, pecans		20	5		14
Cream	Olives	10-15	75	5		14
	20%	5 tablespoons	75	2.5	2.5	14
	40%	$2\frac{1}{2}$ " "	40			
Butter, oleomargarine, fat, oil, mayonnaise (1 pint of oil, 1 egg, and seasoning)		$1\frac{1}{4}$ tablespoons	15			14

plying 28 grams of fat from the last group on the chart as the 115 grams of carbohydrate, 85 grams of protein, and 119 of the 147 grams of fat required have already been selected. This is accomplished by adding two portions of butter or salad dressing.

Any further additions to the diet in the form of drinks, seasonings, fillers, and the like may be taken from among the articles in the first group on the chart which have essentially no food value.

Division of the prescription into three meals occurs after the daily total requirement has been recorded to avoid the use of fractional portions. This preserves the simplicity of the calculations. It is, of course, essential to have the allotment of articles of

diet in mind when the selection is made in order to insure their propriety at any given meal. The distribution in this particular prescription is indicated in Table III in portions.

Of course, unless such a food chart gives reasonably accurate totals even simplicity cannot justify its use in writing prescriptions. In Table IV the values in a series of diets computed from arbitrary figures in Table II and from those in the food table of Joslin's "Diabetic Manual" are compared. When normal variations, as seen in Table I, are remembered, it would seem that differences in calculated value may be within the range of unavoidable error, and in many instances the agreement is surprisingly close.

TABLE III.—A DIET PRESCRIPTION.

Food	Portions	Value			Meals		
		C	P	F	B	L	D
Fruit, 10%							
Orange	1	10			1		
Peaches	1	10					1
Cereal							
Bread	1	10	2.5			1	
Oatmeal	1	10	2.5		1		
Vegetable, 20%							
Potato	2	20	5.0				1
Vegetable, 5%							
Tomato							
Cabbage	2	20	10.0				1
Celery						1	
Lettuce							
Milk (whole)	3	30	15.0	21	1	1	1
Cream, 20%	2	5	5.0	28	1	½	½
Cheese	3		15.0	21		3	
Egg	1		5.0	7	1		
Meat	4		20.0	28			4
Bacon	1		5.0	14	1		
Butter or Salad Dressing	2			28		1	1
Total		115	85.0	147			

TABLE IV.—COMPARISON OF VALUES (GRAMS) SECURED BY ACCURATE COMPUTATION (A) AND BY THE USE OF TABLE II (B) IN A SERIES OF DIETS

	C	P	F	C	P	F
A	54.4	35.0	64.0	127.1	81.9	146.8
B	55.0	32.5	56.0	130.0	82.5	140.0
A	64.0	41.6	72.0	137.6	83.3	146.8
B	65.0	37.5	63.0	140.0	85.0	140.0
A	74.0	52.2	78.0	147.8	84.5	146.8
B	75.0	47.5	70.0	150.0	87.5	140.0
A	84.0	64.4	90.9	156.2	90.3	156.1
B	85.0	60.0	84.0	160.0	92.5	154.0
A	94.2	70.2	96.6	161.2	89.7	182.1
B	95.0	67.5	91.0	165.0	95.0	175.0
A	109.4	76.0	102.3	196.7	93.0	142.9
B	110.0	75.0	98.0	170.0	90.0	140.0
A	116.9	80.1	132.8	182.2	93.4	196.3
B	120.0	80.0	126.0	195.0	100.0	189.0

The chart is presented after successfully using it in a charity hospital without the services of a dietitian, in a charity clinic, and in private practice. There is the belief that it is sufficiently simple, practical, and accurate for general use among diabetic patients who cannot avail themselves of the service of a dietitian familiar with diabetic arithmetic.

SUMMARY

1. Very careful computation of the diabetic diet is futile because of the normal variation of carbohydrate, protein, fat, and water in foods.
2. It is difficult or impossible for many people to use existing food tables intelligently in making up a diet prescription.
3. A food chart is presented, which simplifies the filling and computation of food prescriptions both for the doctor and the diabetic patient, without sacrificing reasonable accuracy.

SUPERFICIAL AND PUNCTATE KERATITIS*

IS IT ALSO A DEPRESSION ENTITY?

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Saradindu Sanyal, M.B., Calcutta, in the May, 1933, issue of the *American Journal of Ophthalmology*, gives a description of the first epidemic of superficial keratitis at Calcutta during the monsoon period, showing five types of corneal involvement and other variations from the form reported by Wright in Madras. Sometime after the stock market debacle of 1929, with wages being cut and lessened working hours for the employed, I began to experience, in increasing numbers, industrial patients who were experiencing corneal and conjunctival irritation. These patients increased in number, and the nature of the superficial corneal wounds so varying and symptoms so inconsistent, I began to question this as the possible source, for in these cases I was unable to find any foreign bodies, either in cornea, conjunctiva or cul-de-sac. Some of these patients would still complain of the presence of the irritation after being away from work for as much as a week. The irritation possibly would not be so great, but the corneal picture under stain would be much the same as on the previous visit. When one of these patients complained that he got a blast in one eye, and I was unable to find any emery dust or other cause of irritation except the staining of the cornea, I then used the fluorescein stain, or it combined with mercurochrome, and would as a rule find the same staining condition in the other eye, sometimes milder and sometimes the staining would be more intense. With these abraded corneas, I was surprised that there was so little photophobia and lachrymation. This is the point that caused me to feel that I was dealing with an entity not of a traumatic nature.

As time progressed, I began to see patients whom I had refracted fairly recently and who were in no way exposed to dust or other irritants, who experienced blurring of vision and irritation when using the eyes. Many of them complained of general lassitude. Some complained that a film seemed to come before the vision when using the eyes, but no discharge; some awoke at night to find the eyes moist, and a dry and gritty feeling of the lids in the morning. In other patients, the eyelids seemed stuck together on awakening, but there was no

discharge during the day, little or no photophobia, but a feeling that grit or something was in the eyes. As the period of the depression has lengthened, the intensity of this condition has appeared more virulent in sporadic cases.

CASE HISTORIES

On April 2, 1932, B. L. K., aged forty-six, complained of eyes being sore and inflamed, also of having styes frequently since the first of the year. At the present he has photophobia and lachrymation, a feeling as if sticks were in his eyes and he is unable to do his work comfortably. The lids were stuck together in the morning, but the eyes feel better and look better Mondays than any day of the week. This is possibly due to rest and being away from his work as an upholsterer. In this case there was considerable congestion of the bulbar and palpebral conjunctiva, flaky scales on the lid margins and at the roots of ciliae. The cornea took a general, but variable, stain, scattered groups and punctate dots. The pupillary area as a rule was less involved than the periphery. The conjunctiva showed a generalized roughening of both eyes. Local treatment for two weeks and a correction of refractive error did not relieve him of his discomfort or the pathology. The corneal staining appeared like the northern lights, brighter in one section and next time, seeing the patient three or four days or a week later, the bright areas would be shading out and other areas taking the darker stain. This patient remained with me for a month and then went to another specialist of his own nationality who was generous enough to call me about the patient and asked what I would suggest.

In early May, 1932, I had a high school student with an inappreciable refractive error who had bilateral suppurative blepharitis marginalis, photophobia and lachrymation, and a bilaterally staining cornea, which I, at the time, accredited to x-ray treatment of the lid margins. I am now inclined to think the lid condition was a secondary condition and the corneal condition the exciting cause and not of x-ray production. More than a year later his cornea still took a variable, but not a punctate, stain.

On August, 1932, I refracted a woman of sixty-nine, who, six weeks later, had the condition in both eyes in such a way that it was impossible to use the eyes, deep staining of cornea; generalized staining of conjunctiva, pain, photophobia and lachrymation for six weeks or more; in fact, I was not making her comfortable and she became discouraged and I saw her no more.

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On December 3, 1932, Dr. H. C. Wolfe asked me if I would see a patient of his whom he thought caught pink eye from his child who was sent home from school. The patient, a market attendant of thirty-two years, had been confined to his home in a darkened room for nearly a week with intense pain in his eyes, photophobia and lachrymation, the condition not responding to treatment. A corneal ulcer was feared, and I was called. The condition did not present the picture of acute contagious conjunctivitis, nor was an ulcer present, but the cornea and conjunctiva of both eyes took a deep stain. I treated the condition and prescribed for home treatment and asked to be called if the condition did not respond. I was called four days later and at this time found an ulcer 2.5×2.5 mm. of the left cornea just below the pupillary area, the right eye considerably improved. The mother and two boys, five and seven, also had the eye condition in a milder form. It required nearly three months of careful treatment before healing was complete, hypopion developed and an infiltrating exudate developed in the stroma of the cornea under the bed of the ulcer, requiring a partial Saemisch operation before healing would take place. Ten months and more have elapsed since the acute onset in this case and the right cornea still takes the stain, but less with each visit, the last visit a generalized staining with no observable punctæ.

While the former ulcer patient was still under treatment, Mr. C. R. H., aged fifty-five, was referred to me December 28, 1932, with a central, left corneal ulcer, the eye having bothered for about six weeks. The vision was poor in this eye from previous attacks of what he considered might be the same condition, which formerly had responded to home treatment. This eye, however, became so painful he came for relief. I found a central ulcer of the left cornea 4.5×5 mm. implanted on an old corneal scar, signs of hypopion present and an inverted mushroom shaped accumulation of exudate behind the ulcerated area and extending into the anterior chamber. The patient insisted on palliative treatment, which I complied with for two weeks and then advised an operation. That was the last I saw of the patient for eight days; in the meantime he had gone elsewhere for help and returned a physical wreck with a continuous headache. The latter may have been due to the eye condition or an old specific infection, 4+, he harbored. As he was in intense pain, I gave him a hypodermic of morphine, unwisely, for I shortly learned that he was an old morphine addict and I had that to contend with before his recovery.

I performed a Saemisch operation, evacuating the anterior chamber of the exudate, with immediate benefit, but later threatened, and scheduled the eye for enucleation in order to take away the imaginary pain that only morphine relieved. Local and constitutional treatment was employed for nearly four months to clear up the ulcer, and when last seen (ten months later), the cornea of the right eye still took the stain in a less degree than formerly.

I have had several others of these patients since with corneal ulcers, more superficial than the two just referred to, that cleared up in two or three weeks' time, but still leaving the cornea that took the superficial sheen or punctate stain.

On February 18 of this year, S. G., twenty-eight, an industrial patient, was referred for a diagnosis call, claiming that a day or so before he got a dust blast in his eyes and they had been discharging since. At the time I saw him, he had a profuse

stringy discharge in both eyes, having all the characteristics of acute gonorrhea, little swelling of the lids, and very little photophobia. I stained a smear of it and found a few scattered diplococci, extracellular. I also sent another to the State Health Laboratory, receiving a negative report, and also had the discharge cultured with a negative report. It was not gonorrheal because the discharge lessened promptly with treatment, but the cornea and conjunctiva still took the characteristic stain of the epidemic condition at the time and also more than two weeks later when last seen.

On June 2, 1933, J. M., aged forty-one, went to bed with no physical complaint of any nature and awakened in the morning to find vision hazy. When later looking at objects, he found he had double vision that necessitated closing one eye in order to see clearly. About 10 A. M. he reported at the office with a tendency to double vision due to a paresis of right internal rectus muscle. Double vision cleared up before the day was over. Negative urine, blood taken and reported negative. Had no complaint of feeling unwell in any way previous to awakening on the morning of June 3. I placed him on free elimination and asked him to report three days later when I could report on the blood. At this time I checked over his eyes and found they had apparently returned to their normal balance. There was no complaint of photophobia or lachrymation, but there was a slight amount of congestion of the bulbar conjunctiva, and in using the stain the left cornea took a superficial uniform green sheen, the right cornea showed a single superficial punctate dot on the nasal side in the pupillary area, a green sheen of the cornea with a slightly deeper staining area in the nasal quadrant. No complaint of photophobia or lachrymation.

On this same date, June 8, 1933, Mrs. H. R., aged fifty-one, of Holland, came to this office, not because of great discomfort with her eyes, but because she had shown patients to another office in the building. As I had treated her for a non-specific irido-cyclitis of the left eye about a year previous, she wanted to see whether her glasses were still satisfactory. When I last saw her at the end of the former treatment, she still had some photophobia which had continued and which she now thought was a weakness left from the old trouble. As her husband had not worked for more than one and one-half years, she put up with the discomfort of photophobia, lachrymation and irritation she experienced in using her eyes, rather than be an expense. The eyes checked fairly closely with present glasses. The lids and bulbar conjunctiva were injected, lids not swollen, a mucopurulent discharge at right internal canthus with a stringy tenacious plug of it protruding from the upper puncta; pressure over sac caused no regurgitation. She has had a partially obstructed tear duct on the right side for years. The left eye showed much old pathology on the posterior surface of the cornea, and in the deeper stroma refractile bodies like fine grains of sand, and on the posterior surface of the cornea one large and a half dozen smaller disks of pigment. The cornea of both eyes took a deep stain as did the conjunctiva, patches punctæ, singly and in groups, the left cornea showing a conglomerate punctate grouping in the pupillary area and a deeply staining cornea. Under a week of local treatment, the discharge of the right eye let up, the cornea stained but faintly, while the cornea of the left showed numerous punctate staining areas scattered over its surface. The adjustment of financial and family worries has reacted beneficially.

I have a number of cataract patients who manifest this condition in a mild or aggravated form. Mrs. C. C. S., aged sixty-one, bilateral senile cataracts, vi-

sion reduced to 20/40 and 20/200 with correction. She has experienced considerable photophobia, lachrymation and congestion of bulbar and lid conjunctiva, but no swelling of the lids. I have observed the condition of the cornea for nearly a year and have had her under local and constitutional treatment. The cornea have taken a variable stain at every visit, much improved at times, but the last time I saw her the cornea took a more intense stain than at any previous visit; clouds, sheen and punctate, singly and in groups. She said her eyes were much worse after prolonged mental anguish to which she has been exposed during the past year, the last shock having been recently.

Mrs. G. B., bilateral senile cataracts. Vision reduced to light and shadow and 20/70. Has been under observation for nearly four months with a superficial condition of cornea, more of generalized discrete punctate condition. Treatment directed mainly at the eye with a mature cataract has caused the cornea to clear up almost entirely; the other cornea still takes a variable stain.

Mr. O. R., bilateral senile cataract, with bilateral corneal involvement. Mature cataract of left eye and an acute progression in right. He has been under observation for over four months because of photophobia and lachrymation and difficulty in seeing. Both cornea take a deep stain, variable punctate grouping, discrete and cloud-like staining. The conjunctiva bulbar and lids are injected. The disturbed vision of this patient is his greatest discomfort. With a correction in the right eye, he sees 20/40 hazily, but reads Jager 3 and 4 about 8 inches. With +1.00 + 50 x 60 he reads 20/20+ for distance but must bring reading matter still closer than that without correction.

In others of these numerous patients who have taken the corneal stain, I have found that some have complained of intense itching of the lids externally; the skin may be dry and parchment-like with flaky fine dandruff-like scales at lid margins and on side of nose. Others complain of a watery discharge that produces an excoriation of the skin at the external canthus. These patients sleep, in greater part, lying on the affected side, the tears leak out producing the scalding and chafing that is aggravated by the wiping of the eyes, thus producing the unilateral eczematous eruption occasionally observed in these patients.

The characteristics of this condition have been variable in ages from five to ninety years. Males are affected as much as females; marked photophobia and lachrymation have been observed in only a small percentage of the cases. Sticks or roughening, as if grit or some foreign body were in the eyes, is a frequent complaint. Discharge, stringy, purulent in nature, has been observed in two and several others more recently. Flaky, dandruff-like scales on lid margins and on surface of skin at internal canthus, have been observed in nearly all, also a dry, gritty feeling of lids in the morning. The more aggravated complained of the lids

being stuck together on awakening. Smarting and burning in children has been the predominating complaint.

I have experienced occasional complaint of pain in the eyes or brow pains in patients who have, or have had, grippe or head colds, while other members in the same family have not been indisposed, have no complaint, but who have this same eye pathology in some form. Others complain of headaches on using the eyes; others, vision seems blurred with or without glasses. Several presbyopic patients complained that they could see better to read with distance glasses than through the reading portion; one senile cataract patient who formerly required a 50 cylinder axis 75 now requires a +1.00 50 x 60 to give normal distance vision, while for reading it brings his reading point inside of 10 inches. Formerly, his presbyopic addition was a +2.00 sphere.

Pericorneal injection is not observed in the mild cases and there has been very little injection of the lid and bulbar conjunctivæ unless there is also conjunctival involvement. In the milder cases the corneal stain may not be seen with focal illumination and the loupe, but is demonstrated with the hand or larger slit lamp. Other of these cases may show a superficial staining (sheen-like) in one eye and sheen and punctate areas of staining in the other. Single or scattered punctate areas in the pupillary area do not seem to interfere with the vision, while grouping or conglomerate masses may interfere to a slight degree with distant vision, and, if centrally located in pupillary area, does produce a blurring for close work. In the industrial patients I have observed a greater variety of superficial staining of the cornea; sheen, punctate, seldom clouds, but striæ (hair-like), extending from the upper limbus to lower, passing through pupillary area, shorter striæ mostly from upper or lower limbus and radiating toward pupillary area, then again, scroll or hook-like striæ near or in the pupillary area. None of these striæ seem elevated and none of the staining areas suggest being elevated in any of the cases, unless it be in the group punctate or the conglomerate punctate which later may become one of the dense, cloudy, areas of staining. This elevation is mainly due to an accumulation of mucus and debris on the surface.

I have not observed a tendency to anesthesia of the cornea. Mild medication may

produce a smarting or irritation when dropped on the eye. No change in anterior chamber or its contents except in two ulcer patients, no appreciable change in tension and no iris pathology unless there has been other complications. I have not observed that the eye condition has had an antecedent cause such as gripe or colds, and sinus involvement has been ruled out in some of the aggravated cases. Laboratory reports and findings have been of a negative nature. The thick discharge shows pus cells and breaking down epithelial cells with a few scattered extracellular diplococci observed in one. Other Michigan doctors report the negative laboratory findings in this condition as suggested in the (May 13, 1933) *Journal of the A. M. A.* under Querrie and Minor notes, the editor suggesting "Angular Conjunctivitis" and due to the diplobacillus of Morax and Axenfeld.

The eye condition that is in epidemic form in this section undoubtedly falls under the description "A form of Superficial Keratitis," first described by Fuchs, 1889. It is unlike that of the epidemic reported from Calcutta in that this involves both eyes (the condition does not clear up promptly) and only in one or two cases observed has the discharge been of an acute nature. The two severe cases of ulceration of the cornea might fall under the type described by Wright, involving the entire thickness of the cornea. I have seen two, possibly three, of the 1 and 2 type as that described by W. L. Phillips, in the *Annals of Ophthalmology*, January, 1913. One was free of this discomfort when he got away from the stock on the farm; on a heavy sultry day, when working about the horses, the eyes would be worse. One was relieved when she quit working in a beauty parlor, and the third was associated with a hair dressing establishment; condition improved as soon as contact was broken. These are suspiciously of allergic nature, but of dissimilar pathology to what we are observing and were in people beyond fifty years of age. In younger children, I have observed the sheen, but not the punctate staining, but in older members of the same family who claim no discomfort, I have observed both sheen and punctate staining. Some of the cases receive prompt relief from local treatment, while others receive but little benefit. The nervous type seem to be more susceptible to this condition than

those of the phlegmatic type, systemic treatment apparently has not produced benefit, and local treatment, while beneficial, does not promptly clear up the corneal pathology.

In 1931 about 15 per cent of eye patients from one industrial plant complained of eye irritation from dust blasts. In 1932 about the same percentage, with men sticking closer to their work and the attendant in the first aid sending in patients whose irritation persisted. For the first half of 1933, this has jumped to nearly 25 per cent. This condition has become evident in the general run of patients during the past year and its incidence has been multiplied during the past trying four months. As many as seven of these patients have been seen in my office in the course of one day and I found it very prevalent in the City Eye Clinic during the month of May.

As to the etiology of this condition, I do not think it due to fomites nor do I think it due to infection; were it so, local and constitutional treatment would be more beneficial. If only symptoms complained of were to be considered, eye strain would be the natural conclusion. In the case of B. L. K., allergy might be considered, for shortly before he began to have eye trouble, the shop, of which he was part owner, received a consignment of a new kind of moss which he had been using in his work. The improvement of his eyes after being away from his work for several days would partially bear out my reasoning.

This condition may be due to nutritional disturbance in the young individuals and to a neurotrophic disturbance in the older. This depression has brought nerve strain, has brought economy in conscientious individuals and economy in food selections that may result in avitaminosis in the younger individuals and neurotrophic disturbance in those of the nervous type. The attitude of mind aids or hinders the digestion and assimilation of food. It is recognized that one beset with fear, anxiety, or worry, may literally starve in the midst of plenty. Francis Roy Cooper has said, "Trouble is an ounce or an atom depending on how we take it." We know that worry hastens the visit of the grim reaper.

The condition was first observed in industrial patients because of a possibility of injury, which thus gave me an opportunity to observe the pathology, knowing the social condition of these patients; scarcity of

work, reduced wages, home, auto and furniture, etc., bought on the installment basis certainly has produced a nervous strain. Gradually financial losses, reserves consumed, bank holiday, and the condition with us is an epidemic. Those who take life seriously and those of the nervous type seem most susceptible. With worry lessened, work more prevalent and improved financial conditions, I am finding an improvement in

the condition with medical treatment more responsive.

MEDICAL ARTS BUILDING

BIBLIOGRAPHY

1. Cannon, W. B.: Some modern extensions of Beaumont's studies on Alexis St. Martin. *Jour. Mich. State* (March, April, May), 1933.
2. Fuchs: Keratitis, superficial punctate. *Amer. Encyc. of Ophth.*, 9:6814.
3. Editorial: Latent avitaminosis. *Jour. A. M. A.* (July, 8), 1933.
4. Eusterman and Wilbur: Vitamin A. *Jour. A. M. A.* (June 11), 1932.
5. Sanyal, Saradindu (Calcutta): Epidemic of superficial keratitis. *Amer. Jour. Ophth.* (May), 1933.

WHOLE BLOOD TRANSFUSIONS AS A TREATMENT FOR SEPTICEMIAS IN CHILDREN*

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The first recorded blood transfusion for the treatment of disease was performed at Rome, Italy, in 1492. The patient was Pope Innocent the Eighth; the disease, old age. The incident is referred to in Merejkowski's³ "Romance of Leonardo da Vinci" and it seems not out of place in a romance. Clendenning¹ refers to it in his usual pithy fashion—"the treatment was one hundred per cent successful, the donors and the patient died." Garrison² believes the record to be apocryphal.

Credit for the first authenticated human transfusion is given to Denys² of Paris, France, in June, 1667, and for the second to Lower² of Cornwall, England, in November, 1667. Hans Buchner in 1889 discovered the bactericidal effect of blood serum, but it was not until the twentieth century after the work of Landsteiner, Maragliano, Eisenberg, Jansky, and Moss that the way was cleared for the routine use of blood transfusions as a recognized and safe therapeutic procedure.

Unger⁵ deserves the credit for the development of a greatly simplified apparatus for the transfusion of whole, unmodified blood. Citrated blood transfusions have been found to be useful in various conditions requiring the restoration of a depleted blood supply but have not appeared to be of great value in combating infection. It has been demonstrated that in citrated blood, opsonins, the phagocytic power of white blood cells, and the complement are diminished, and an anti-complementary reaction is produced.

It is our purpose in this paper to record our experience in the treatment of demonstrated sepsis with whole, unmodified blood transfusions. This may be regarded as a preliminary report, as the small number of cases we have treated precludes anything but general conclusions. It has not been our

good fortune to have had the opportunity to try autogenous immuno-transfusions because of the overwhelming character of the infection in the cases presented below, and the difficulty and expense of maintaining heterogenous immunized donors in this small community has precluded the use of this method of transfusion therapy.

CASE HISTORIES

Case 1.—This case has been previously reported by one of us.⁴ Donald O., aged five years and five months, was sent to the hospital December 11, 1930, with a provisional diagnosis of septicemia following a nasopharyngitis and cervical adenitis of three days duration. On admittance his temperature was 105.4°, blood count 17,500 w.b.c., with 77 per cent polymorphonuclears. Three days later the count was 20,750 w.b.c., and 83 per cent polymorphonuclears. The urine showed no pathology. He was given an immediate whole blood transfusion of 250 c.c. and this was repeated every other day for a total of four transfusions. Three donors were used, one for the first two transfusions, and one each for the third and fourth. Repeated blood cultures demonstrated the presence of staphylococcus albus in the blood stream. Following the fourth transfusion the child's blood culture produced no growth, the temperature dropped to normal and he made a complete recovery without localization of the infection. Diagnosis, staphylococcus albus septicemia.

Case 2.—Joan Z., aged three years, was seen at her home after a nasopharyngeal infection of three days duration. At this time her temperature was 105.4°, she was delirious, and a very obvious peritonitis was present. She was immediately hospital-

*From the pediatric and surgical staffs of St. Joseph's Mercy Hospital, Pontiac, Michigan.

ized. Her blood count showed w.b.c. 11,500, 84 per cent polymorphonuclears. Her urine contained albumin, hyalin and pus casts and a few red and white blood cells. We felt the peritonitis was probably due to septicemia and to confirm this an abdominal paracentesis was done. Direct examination of the peritoneal fluid revealed a pure suspension of long chain streptococci which culture demonstrated to be hemolytic. Blood culture done at the same time demonstrated the presence of the identical organism in the blood stream. A transfusion of 250 c.c. of whole blood was given. The patient died thirty-six hours after admittance to the hospital of an overwhelming hemolytic streptococcic septicemia.

Case 3.—Mary M., aged nine years, was seen at the hospital July 9, 1932. Her temperature was 105°, w.b.c. 6,500, 67 per cent polymorphonuclears. The urine showed no pathology. She had been ill for five days with a high fever and chills without evidence of localization of her infection. In the past twenty-four hours she had begun to complain of pain in her legs. She appeared acutely ill and very toxic. A provisional diagnosis was made of septicemia with probable early osteomyelitis of the right femur, and confirmed by blood culture which was taken immediately, and by operation on the right femur two days later. At this time x-rays failed to show any bone pathology but at operation a small amount of pus was found after drilling through the cortex over the mesial aspect of the junction of the middle and lower thirds of the right femur. This pus on culture produced a pure growth of non-hemolytic streptococcus identical with that obtained by blood cultures. A transfusion of whole blood of 360 c.c. was given on July 20, 375 c.c. on July 25, 350 c.c. on July 29, and 400 c.c. four weeks later. Blood cultures were negative after the first transfusion. The osteomyelitis ran a stormy course necessitating two more operations but the child is now well. Diagnosis: Non-hemolytic streptococcic septicemia with subsequent localization in osteomyelitis of the right femur.

Case 4.—Charles S., aged five years, was first seen at the hospital March 2, 1933. According to the history given by the mother he had been ill for about two weeks with a cold and cervical adenitis. Four days before admittance his right ear drum ruptured spontaneously. Two days later he complained of severe abdominal pain and vomited everything taken by mouth up to the present time. Temperature on admittance 105°, w.b.c. 30,400, polymorphonuclears 95 per cent. The urine contained albumin, hyalin casts and a few red and white blood cells. Examination revealed a very ill child with a suppurative right otitis media and peritonitis. An abdominal paracentesis was done and on direct examination the exudate was found to contain a pure suspension of short chain streptococci. This was confirmed later by culture. A blood culture taken at this time produced the same organism as found in the peritoneal cavity and streptococci were also found upon culture of the purulent discharge from the right ear. One whole transfusion of 250 c.c. was given shortly after admittance and because of the persistent vomiting 500 c.c. of 5 per cent glucose was given intravenously on the second day. The child's temperature dropped gradually to normal in the succeeding five days, then fluctuated between normal and 101° for the next three days, after which it remained normal. The urine cleared up completely and the child made an uneventful recovery and was discharged the eighteenth hospital day. Diagnosis: Nonhemolytic streptococcic septicemia with peritonitis and right suppurative otitis media.

Case 5.—Andrew D., aged seven years, was seen

at home May 18, 1933, in a stupor. Eight weeks previous he had had measles and contracted whooping cough four weeks later. He was still coughing. He had repeated attacks of asthma and allergic rhinitis during the previous three years. He was sent to the hospital immediately. The same day he developed a flaccid paralysis of all extremities and the right side of his face, with evidence of a partial bulbar palsy. Temperature on admittance 100°, w.b.c. 23,500, polymorphonuclears 56 per cent. The urine contained hyaline and granular casts, a trace of albumin and a few red and white blood cells. His spinal fluid showed a moderate increase of sugar and globulin but the cell count was well within normal limits and the fluid produced no growth on culture, and guinea pig injection showed no evidence of tuberculosis. He was given a blood transfusion of 300 c.c. shortly after entrance to the hospital. A blood culture taken previously developed a growth of short chain nonhemolytic streptococci and a diphtheroid organism which was not identified. Another transfusion of the same amount as the first was given on the third day. The stupor persisted for five days, after which the sensorium began to clear rapidly. The paralysis of the left side cleared rapidly, while that of the right side improved slowly. The child was discharged fourteen days after admittance with some right sided palsy of the face and extremities which disappeared in the next four weeks, that of the face being the last to disappear. Diagnosis: Diffuse myelo-encephalitis with a septicemia of nonhemolytic streptococci accompanied by an unidentified diphtheroid organism.

Case 6.—Dale R., aged seven years, was first seen at home November 27, 1933. His mother stated that he had been hoarse three days previously but had not had any fever until the last six hours. His temperature was 104°, but there were no localizing signs or symptoms except a mild nasopharyngitis. Twenty-four hours later his temperature was 107°. He was sent to the hospital with a provisional diagnosis of septicemia. On admittance his blood count showed w.b.c. 28,400, polymorphonuclears 92 per cent. The urine contained albumin, hyalin and granular casts, and a few white blood cells. He was immediately transfused with 300 c.c. of whole blood. A blood culture taken before transfusion produced a pure culture of nonhemolytic streptococci. The child's temperature dropped gradually in the first twenty-four hours following transfusion to 101°, then rose slowly during the next twenty-four hours to 103°. At this point another transfusion of 300 c.c. of whole blood was given. During the next three days the temperature dropped with slight fluctuations to normal and remained there. The child was discharged seven days after admittance to the hospital and remained in bed one week at home. There were no complications and the urine cleared up completely without further treatment. Diagnosis: Nonhemolytic streptococcic septicemia.

Case 7.—This is not a case of septicemia but is included to show the characteristic findings of abdominal paracentesis in a peritonitis requiring surgical intervention in contrast to a peritonitis of septicemia.

Richard A., aged two years, was seen at the hospital September 12, 1933. According to the history given by the mother the boy had been ill for three weeks with intermittent pains in the abdomen, which had become continuous for the past two days. Everything taken by mouth had been vomited the last forty-eight hours. No temperature had been taken. On admittance the child's temperature was 101.4°, w.b.c. 17,500, polymorphonuclears 90 per cent. The urine contained hyaline casts. Examination of the patient showed an ill child with a generalized peri-

tonitis, probably due to ruptured appendix. An abdominal paracentesis produced a purulent fluid which showed many *B. coli* on direct examination, these findings confirmed by culture. The diagnosis pre-operative was then a general peritonitis from a ruptured appendix. This was confirmed by operation. Fortunately the child made an uneventful recovery without any further specific treatment and was discharged well, seventeen days after admittance.

SUMMARY

Six cases of septicemia in children are presented, of which five recovered. The one death occurred thirty-six hours after admittance to the hospital and was the only case of hemolytic streptococcal infection in the series. One case was due to staphylococcus albus, three to nonhemolytic streptococcus and one to an infection with a non-hemolytic streptococcus and an unidentified diphtheroid organism. Two of the six cases had a generalized peritonitis demonstrated by abdominal paracentesis and examination of the abdominal fluid both directly and by culture. The sole treatment in all six cases was by transfusion of whole, unmodified blood, except for supportive measures, and operation in the one case of osteomyelitis. A case of peritonitis due to a ruptured appendix is included for comparison of the findings in the peritoneal fluid in this type of peritonitis with that of peritonitis due to septicemia.

CONCLUSIONS

1. Successful treatment of septicemia in children depends on early diagnosis.
2. Whole unmodified blood transfusions repeated as often as indicated, which may be daily or every other day, appear to be very useful in combating this type of infection.
3. The amount of blood given at one time will vary with the size and age of the recipient but should approach the maximum for the particular patient.
4. If expected results are not forthcoming after any one transfusion, a new donor should be selected for the next.
5. Abdominal paracentesis and examination of the peritoneal fluid obtained, offers a simple and valuable aid to differentiation between the peritonitis of septicemia and that due to intestinal pathology.

BIBLIOGRAPHY

1. Clendenning, Logan: Behind the Doctor. A. A. Knopf, 1933, p. 305.
2. Garrison, F. H.: History of Medicine. 3rd Ed., W. B. Saunders, 1924, p. 267.
3. Merejkowski, D.: The Romance of Leonardo da Vinci. Trans. by B. G. Guerny. Mod. Lib. Ed., 1928, p. 493.
4. Roehm, H. R., Staphylococcus albus septicemia. Arch. Ped., 44:165-169, 1932.
5. Unger, L. J.: Abt's Pediatrics, Vol. IV. W. B. Saunders Co., p. 624.

DICK TESTS AND DICK TOXIN

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This is a summary of the results in the use of Dick tests and Dick toxin over a period of four and one-half years at Cranbrook School. The average population of the school has been two hundred boys, their average age 14.6 years. All have been Dick tested. Only those results are included where boys have been at the school for two successive years.

A study of the usefulness of Dick tests and toxin will consider the value of this method in preventing scarlet fever; it will also judge the cost of acquiring this immunity in the form of reactions.

THE VALUE OF DICK TOXIN IN PREVENTING SCARLET FEVER

The results from the use of Dick toxin are shown in the Table. Each Dick test has been repeated at the interval of one year following immunization. The average percentage of immunity is 69 per cent. This figure is modified by natural forces affecting immunity, *e.g.*, a certain percentage of Dick

positives will turn negative without injections, likewise a certain percentage of Dick negatives may become positive. This corrected percentage of immunity is 77 per cent. In the year 1929-1930 in which a sixth dose was given, the immunity at the end of the year was 89 per cent. In other years only five doses were given.

That the Dick toxin is an efficacious prep-



RESULTS FROM DICK TOXIN AT THE INTERVAL OF ONE YEAR

Year	5 or 6 Immuniz- ing doses	Average S.T.D.	Per Cent Turning Dick Neg.	Control Series			Corrected Per Cent Immunity
				Cases	— to +	+ to —	
1929-30	43	131,275	93	96	6%	10%	89*
1930-31	29	115,500	55	91	30%	3%	82
1931-32	20	115,500	60	68	18%	1%	77
1932-33	13	157,100	69	42	1%	10%	60**
Averages	105	129,844	69	74	14%	6%	77

*The sixth dose given this year.

**The fifth dose given in two injections: 40,000 S.T.D. and 80,000 S.T.D.

aration is already established. Further evidence is offered here in the absence of a single case of scarlet fever in the school in these four and one-half years.*

In estimating the full value of the Dick preparation it is necessary to recognize the existence of a partial immunity that is conferred, and which may exist in the presence of a positive Dick test. The presence of this latent immunity is well-demonstrated in eight boys who had in the preceding year (1930) received five full doses, without converting a positive Dick reading to a negative. In 1931, each boy was given 10,500 U. (one-eleventh of full Dick dosage), and of these eight boys, six became negative in the fall of 1932, showing that prior to the last injection of 10,500 units the threshold to complete immunity had almost been crossed; and disclosing in these few cases, at least, the existence of a *partial immunity concealed in a positive Dick test*.

In a review of 33,000 cases^{1,2,5,7} receiving five and six immunizing doses, there is recorded only one case of scarlet fever, an incidence of .00003. This very low figure suggests that great numbers of individuals have been given more than adequate dosage, and that substantial reductions in the total of Skin Tests Doses, regardless of Dick tests, would confer a satisfactory (if not absolute) degree of immunity. The reports of Reed and Tellier⁶ include a series of twenty-three cases given only 2,000 units, with 86 per cent immunity.

Stallybrass,⁹ using 7,000 to 26,000 units, in several school groups, greatly reduced the incidence of scarlet fever. In twenty-one boys at Cranbrook, injections were discontinued (because of reactions) before the

fourth or fifth dose (an average dose of 30,000 units). At the year-interval, fourteen, or 67 per cent, were Dick negative; the duration of the immunity, however, was shorter lived. In the presence of an epidemic it seems necessary to carry the inoculation to the point of a negative Dick test; as a purely preventive measure, designed to offset the usual exposures to scarlet fever occurring during childhood, we might well be content with a lower dosage of Dick toxin.

THE COST OF ACQUIRING IMMUNITY TO SCARLET FEVER

The types of reactions encountered were of two distinct varieties: (1) the usual scarlatinal signs and symptoms; (2) certain allergic symptoms. During the first, second, third, and fifth year of injections the reactions manifested themselves in malaise, headache, scarlatiniform erythema, edema of the face and eyelids (rarely with albuminuria), and arthritis. A given vial of Dick toxin often produced a crop of like reactions, *e.g.*, edema or erythema.

During the fourth year the presenting phenomena were wheals, scattered swellings, tachycardia, apprehension, pain and pressure within the chest, flushing of the skin especially of the face and chest, followed rather promptly by a mealy desquamation. In two instances the swelling progressed from one region of the body to another over a period of two weeks. At the end of the third dose 14 per cent of the boys had shown this variety of reaction, and, although the preparation of Dick toxin was changed, lesser reactions continued to occur.

Evidence that this reaction was allergic in character is further offered in comparing the frequency of reactions in boys with a

*One case was reported from home in June, 1933. This boy had shown a negative Dick test the preceding September; he had not received the Dick toxin.

known allergic tendency and those without this tendency. Twenty-five per cent of the boys who reacted to the toxin gave histories of hay fever, eczema, horse-serum reactions or a previous injection of Dick toxin. Only 15 per cent of the others, the normal group, were sensitive to the Dick toxin.

The average illness (requiring absence from school) was two-thirds of a day for a series of five immunizing doses. The severity of the reactions was reduced by using two to three m. of adrenalin with each injection, by resting in the afternoon, and eating a light supper; in 1932 the fifth dose was divided into two smaller doses. It was found that boys showing severe reactions in the earlier doses continued to react to the fourth and fifth injections. It is interesting that the severity of reactions increases from childhood (one-tenth³ to one-fifth of a day) through adolescence (two-thirds of a day) to the adult ^{4,8} (one day or more). Reduction in the number of reactions through refinement of the preparations now on the market, or through intranasal or enteral administration is to be desired.

CONCLUSION

That Dick toxin is of great value in preventing the appearance of scarlet fever in

a boarding school where the relationships among the boys are uninterrupted and intimate, and all are within the age-group of susceptibles to scarlet fever. No scarlet fever has developed in the school during the four and one-half years of the inoculations. The average immunity at the interval of one year is 77 per cent. Reactions, both scarlatinal and allergic, are encountered; the average of total sickness for five doses is two-thirds of a day.

BIBLIOGRAPHY

1. Dick, George F.: The present status of scarlet fever control. *The Med. Officer*, 49:75-77 (Feb. 25), 1933.
2. Gleme, Otto M.: The present status of prevention of scarlet fever by immunization; a review of the literature. *Jour. Iowa Med. Soc.*, 19:532 (December), 1929.
3. Melnich, Theodore: Prevention of scarlet fever: Methods to minimize reactions following inoculations of Dick S. F. toxin. *Arch. of Pediat.*, 50:158 (March), 1933.
4. Peacock, C., Werner, M., and Colwell, C.: *Amer. Jour. Dis. of Child*, 44:494 (September), 1932.
5. Peairs, Ralph: Immunization against scarlet fever. *Ill. Med. J.*, 62:246 (September), 1932.
6. Reed, George E., and Tellier, Herman: Epidemic streptococcal infections with special reference to scarlet fever toxoid administration to Dick positive adults. *Canad. Med. Jour.*, 25:584 (November), 1931.
7. Rhoades, P. S.: The control of scarlet fever. *Jour. Iowa Med. Soc.*, 19:103.
8. Rhoades, Paul S.: Skin tests and immunization against scarlet fever and diphtheria. *Jour. A. M. A.*, 97:153. Result in nurses of Cook County Hospital.

BILATERAL NEPHROSTOMY ON ACCOUNT OF LIGATION OF BOTH URETERS FOLLOWING VAGINAL HYSTERECTOMY

CASE HISTORY

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Mrs. E. W., aged sixty-six, was admitted to Harper Hospital in 1910. Her history up to that time was irrelevant, aside from the fact that she had had a perineorrhaphy elsewhere about ten years before her entrance to the Hospital.

Examination showed a moderately prolapsed uterus with cystocele, with classical carcinoma of the cervix. The uterus was not fixed, so that it seemed advisable to perform a vaginal hysterectomy, which was performed with the usual technic.

There was some scar tissue present from the previous operation. The operation, which consisted of removal of the uterus and entire adnexa and as much perimetrial tissue as possible, was easily performed.

The patient did well after her operation, but it was noted that she did not void urine, since about 5 c.c. of urine only was passed after the operation. We felt that it was possible that we had tied the ureter on each side. When a catheter was passed we were unable to obtain urine, and were convinced that this was the case. There was no drainage from the vagina except normal secretions following such an operation, so we felt that the ureters had not been severed. After forty-eight hours the patient suffered considerable pain in her back so that it was felt that a bilateral nephrostomy should be performed, which was done, with local anesthesia, in the patient's bed. The kidneys were both swollen and as little manipulation was done as possible. The field of operation, however, was made more access-

ible on account of the swelling of the kidneys. Each kidney was punctured in several places, when there was a marked escape of urine immediately. Large hot boric acid compresses were placed over the incisions; urotropin, grains 10, three times a day was given. Urine continued to drain from each side, requiring dressing changed every three or four hours for four days; during this time patient was catheterized daily. On the fourth day after operation about 40 c.c. were found in the

urinary bladder; each day up until the tenth day the urine increased. On the tenth day after operation urine was practically normal, although somewhat scanty, and the 14th day after operation patient was passing a normal amount of urine, but no urine drained from incisions after this time. The nephrostomy wounds were entirely healed in three weeks. The patient had no marked difficulty, was

quite well, and died November, 1933, at the age of eighty-nine years.

This case is cited for the importance of handling a case where the ureters have been tied. Number two plain catgut ligatures had been used. This is the only case so far as we know on record at Harper Hospital, where this procedure had been followed, and our first and last case in which the ureters had been ligated.

OCULO-GLANDULAR TULAREMIA

CASE REPORTS

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Tularemia in Michigan is not such an uncommon disease; 12 cases were reported in 1933, 21 in 1932, and 6 in 1931. Whether any of these were of the less frequent oculo-glandular form similar to that which I report, I do not know. The involvement of the cornea in these cases is quite rare.

Case 1.—A polish male, seventeen years old, gave a history of having shot a rabbit November 5, 1933, while out hunting. The rabbit was cleaned by a brother three days later and eaten the same day. None was eaten by any other members of the family. Five days later the patient awoke with redness and swelling of the upper left lid more pronounced in the temporal half. By evening it had become much worse. The eye was sensitive to light and the patient began having chills.

The next day, November 14, he came to the office for an examination complaining of frontal headache, weakness and aching of the arms and legs, also tenderness and swelling of the left eyelid.

Physical examination showed a well developed male with the appearance of being quite ill. He had 104 degrees temperature. His left upper eyelid was red, swollen and drooping so that there was difficulty in elevating it to examine the conjunctiva. The latter was chemotic and red only in the upper temporal quadrant, involving both the palpebral and bulbar conjunctiva in this area. He complained of marked tenderness of the tissues overlying the lachrymal gland, giving one the impression of an acute dacryoadenitis. The pupils reacted to light and accommodation, vision 20/20 O.U., fundi normal. The preauricular gland on the left was swollen and tender, about an inch in diameter. There was also considerable swelling of the left submaxillary and deep cervical glands. The ears were normal and there was only a slight congestion of the nasopharynx.

The patient was sent to the hospital, where examination showed the heart, lungs, abdomen and extremities to be normal.

Laboratory findings: X-ray showed no involvement of the bony orbital ridge. Bilaterally the ethmoidal sinuses were slightly hazy. The leukocyte count was 16,400; urine normal. A smear from the conjunctiva was negative for organisms.

Clinical course: The patient's temperature on admission to the hospital was 104 degrees. This dropped each morning with about 2 degrees rise each afternoon. There was an increased elevation of the temperature on the fifth day, at which time a trace of albumin and casts were found in the

urine. Four grayish ulcers appeared on the palpebral conjunctiva. They were about two millimeters in diameter extending along the tarsal border of the upper left lid. A smear from the ulcers was negative. After this date the temperature gradually dropped to normal in a week's time.

During the third week he complained of pain in the distal portion of the biceps muscle with palpable left axillary glands. At this date he began having a slight rise of temperature. The next day the left eye showed a chemotic swelling on the limbus between two and four o'clock with redness of the conjunctiva extending temporally in a fan shape. The report was received on the blood at this time showing positive agglutination for tularemia; negative blood culture and negative for syphilis, typhoid and undulant fever.

The next day a similar fan shaped conjunctivitis appeared in the opposite eye extending nasally to include the caruncle and the same chemosis along the limbus for 5 mm. Both eyes cleared in about ten days.

During the sixth week he developed a maculopapular rash on the right cheek. Several days later the left submaxillary gland had to be incised, after which time the temperature remained normal. During the ninth week the right eye had a recurrence of the bulbar conjunctivitis involving the same sector nasally. And on the cornea four discrete punctate maculae appeared at three and ten o'clock resembling the lesions seen in superficial punctate keratitis. There was inter-palpebral redness of the conjunctiva adjacent to the lesions. A week later the lesions were much improved. The blood at this time showed positive agglutination in dilutions of 1:1280. When last seen on March 3 he had a circumscribed maculopapular rash on the upper lip about 2 cm. in diameter. Otherwise he was feeling well and the eyes were giving him no trouble.

Case 2.—Brother, one year younger, of patient cited in Case 1, was not examined until February 13, but states that he cooked the rabbit eaten November 8. Six days later he had chills so severe he could scarcely do his farm chores. He did not report it to his family, however. He says he had fever for

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about three weeks, worse about 2 P. M. He also complained of night sweats. One week after onset of fever his hands and feet broke out with red pimples. This lasted about one week. He says he has had several recurrences of the rash since then. Twelve weeks after onset of disease a general examination was negative. His eyes were normal and there was no evidence of cervical adenitis. Blood examination showed positive agglutination of tularemia in dilutions of 1:1280. His temperature was normal.

March 3, when last seen with his brother, he reported that two days previous his right eye became bloodshot. Examination showed three nodules in the limbus about 0.5 mm. in size which stained with fluorescein, located at nine o'clock on the limbus. There was a conjunctivitis extending temporally from this lesion to the outer canthus. The cornea was clear. Two nodules seen on the palpebral conjunctiva did not stain. He also had another skin eruption on the face at this time.

COMMENTS

Case 1 is unusual in several respects; first, because of the involvement of the lachrymal gland and adjoining structures simultaneous with the other glands on the same side of the head, but without any manifest lesion as a portal of entry to the lachrymal gland;

secondly, the involvement of the cornea at about the same time as the skin lesions later in the disease with all the appearance of allergic reactions.

The increased elevation of temperature in case one with the formation of ulcers on the palpebral conjunctiva and the involvement of the kidney would lead one to suspect that this was the stage for the formation of the gray nodules which are found scattered in the body in animal experimentation.

Given the same source of infection it is interesting to guess why the glands are involved as in Case 1 and not in Case 2.

The similarity of these two cases with those reported by Dr. Bertha Klein-Mancreiff and Bernice Rhodes in the Archives of Ophthalmology, August, 1933, is striking. I cannot help feeling also that the evanescent lesions of the skin and conjunctiva appearing several weeks after the onset of the fever are allergic in nature.

SUBACUTE BACTERIAL ENDOCARDITIS IN PREGNANCY

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Due to the more recent work of Libman,² following Osler's earlier writings, subacute bacterial endocarditis has become recognized as a fairly frequent disease entity. The streptococcus viridans has been generally accepted as the etiologic factor, and the association of this with rheumatic fever has been the subject of a great deal of discussion. It is conceded by many that the preceding rheumatic damage could have been effected by the same organism causing the terminal disease; with a so-called "free interval" phase or a "bacteria-free stage," as described by Libman. During this quiescent period the patient is free from any signs or symptoms except for damage already done to the cardiac valves. Then an exacerbation occurs, the cardiac signs become more pronounced, and the second group of symptoms are produced, caused by the septicemia of the invading organism.

It is rather surprising that the incidence of this disease in pregnancy is so small. There are only seven cases of subacute bacterial endocarditis associated with pregnancy described in the literature: Terwilliger³ reporting one case and reviewing two by Walser, one by Kobacher, and two by Mengert; and Bradford¹ adding another.

For this reason I am reporting the following case.

CASE HISTORY

Mrs. P. M., aged twenty-two, para 1, last menses on August 15.

General health was good although the patient was inclined to be nervous. Appendectomy was performed four years ago. Tonsils and adenoids were removed at the age of three.

The patient was first seen on October 20, at which time physical examination was negative except for a soft murmur over the pulmonic area to which no serious significance was attached. Blood pressure and urinary findings were negative. Patient was seen at bi-weekly intervals and followed an uneventful course until March 9, at which time she complained of a severe pain in the right sacro-iliac region. She stated that the previous day, having forgotten her door key and locked herself out, she entered her home by stepping through a window with considerable difficulty; and following this the pain in the right hip came on. An orthopedic surgeon was called into consultation and he diagnosed sacro-iliac strain and advised rest in bed and other

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measures which were followed. The patient was temperature-free and remained comfortable as long as she did not move, but complained of severe pain on movement. Subsequent roentgenologic examination of the hip joint showed no evidence of bone or joint pathology.

The patient remained in bed and was gradually improving from the joint pain when, on April 19, in her eighth month, she went into labor. She was transferred to Providence Hospital and delivered normally of a five-pound living female child, duration of labor being twenty hours. On the fourth day post-partum the temperature rose to 101.6 degrees and there was complaint of pain over the left kidney region. Physical examination at this time was negative, but the urine showed the presence of pus and a diagnosis of pyelitis was made, and treatment was instituted. The temperature continued to be intermittent and on the tenth day post-partum the patient, against advice, insisted on going home and was discharged by ambulance. Her condition remained unchanged until the fifteenth day post-partum, at which time a soft, systolic blowing murmur was heard over the entire precordial area. The case was then referred to Dr. George McKean, who subsequently diagnosed subacute bacterial endocarditis. I saw the case only once thereafter but Dr. McKean informed me that she developed all the classic signs and symptoms of a subacute bacterial endocarditis. Inasmuch as hospitalization was refused, laboratory work was not done except that a blood culture showed a typical growth of streptococcus viridans. The patient gradually grew worse and died six weeks post-partum.

The baby was removed from the breast on the fourth day post-partum and placed on a formula. It continued to gain and was in good condition at the time of the mother's death.

Subsequent interrogation of the parents of the patient as to her early history elicited the information that as a child she had been very "nervous and fretful," and that she had suffered from an attack of "rheumatism" during childhood. A young-

er brother had also suffered from rheumatism and had been treated for a subsequent pericarditis.

SUMMARY

It seems in this case, as in those previously reported, that the onset of the terminal illness was not related directly to the pregnancy. Although not definite, there appears to be a history of previous rheumatic disease and possible cardiac involvement therewith. In retrospect the episode of the right hip joint pain may have been a concealed rheumatic condition, or an embolus, although the absence of temperature is hard to explain. Clinically, the pregnancy did not appear to aggravate the condition and the consensus of opinion on those cases reported is to permit pregnancy to progress to term even where the diagnosis has been made early. In this case the flare-up occurred, not during the pregnancy, but in the puerperium.

The babies apparently escape the infection, for in all reported cases the follow-up showed them doing well. It is interesting to speculate as to their susceptibility to cardiac infection later in life.

REFERENCES

1. Bradford, W. Z.: Subacute bacterial endocarditis in pregnancy. Case report. *Amer. Jour. Obst. and Gynec.*, 27:206 (February), 1934.
2. Libman, E.: Subacute bacterial endocarditis. *Amer. Heart Jour.*, 1:25, 1925.
3. Terwilliger, W. G.: Subacute bacterial endocarditis in pregnancy. *Amer. Jour. Obst. and Gynec.*, 27:248 (February), 1934.

SYMPTOMATIC RUPTURE OF A GRAAFIAN FOLLICLE*

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In an acute abdominal case there is a formidable list of serious conditions to be considered in deciding whether the patient is one for emergency surgery or not. This paper deals with one of the less frequent causes of an acute abdominal syndrome which an examination of the literature shows to have been nearly one hundred per cent misdiagnosed; *i.e.*, the symptomatic rupture of a Graafian follicle. It is a condition, however, which should be constantly kept in mind in connection with a sudden pain in the lower abdomen. The important thing in cases of rupture of the Graafian follicle with hemorrhage is to be able to tell whether there is sufficient intraperitoneal hemorrhage to demand immediate laparotomy. In the writ-

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er's experience most of the cases of this condition presented the picture of a mild acute appendicitis with insufficient localizing symptoms or shock to justify immediate laparotomy.

In such cases a knowledge of the physiological processes occurring in the ovaries, so far as that subject is understood, will facilitate an accurate diagnosis and evaluation of the symptoms. Ovulation, accord-

ing to the older views, was supposed to occur coincidentally with menstruation. More recent views on the subject contend that ovulation may occur at any time in the menstrual cycle. It has also been strongly argued that it more frequently occurs ten to fourteen days prior to the first appearance of the menstrual flow. Ovulation may take place without the occurrence of menstrual flow. It has been shown that at birth the ovaries contain from twenty to thirty thousand primordial follicles. These develop as the individuals develop but only those that develop after puberty result in mature ova. The follicles that develop previous to the menstrual life merely result in atretic follicles and do not extrude an ovum. The mature Graafian follicle is seen as a small bleb on the surface of the ovary with a fine tracery of blood vessels coming from the periphery and fading out at the point of greatest convexity of the bleb. This point is called the stigma. Ovulation occurs when this follicle ruptures at the stigma, releasing the ovum, and the fluid within the follicle, into the peritoneal cavity. At the sudden release of the intrafollicular pressure there is an extravasation of blood into the concavity left by the ruptured follicle. Normally a clot forms as soon as this cavity is filled. The granulosa cells that line the follicle now hypertrophy and the lutein cells are in the process of formation. These cells form a supporting structure for the granulation tissue which proliferates from the ovarian stroma and eventually replaces the lutein cells. As the lutein cells atrophy and the fibrous changes occur, the structure takes on the characteristics by which we recognize the corpus albicans. This, in turn, undergoes hyaline degenerative changes and eventually may be all, or in part, absorbed. Under normal conditions at the time ovulation takes place, the patient has no symptoms from the process described above. It is easy to see, however, that the filling of the cavity of the follicle with blood might not stop there and that some blood might escape into the peritoneal cavity. As Wilfred Shaw⁸ suggests, the rupture may go through one of the vessels in the wall of the follicle and, extending through the wall of the follicle to the ovary, result in sufficient hemorrhage to arise above the clinical horizon. A typical case of hemorrhage from a ruptured Graafian follicle should, therefore, oc-

cur during the time that ovulation is most likely.

THEORIES OFFERED AS PREDISPOSING FACTORS

An explanation for the reason behind symptomatic hemorrhage from a ruptured Graafian follicle is, of necessity, theorizing. Suffice it to say that the only author to report positive pathology in a specimen removed at operation is E. A. Schumann.⁷ He found distorted infiltrated vessel walls and suggested that sexual excitement, causing congestion of the pelvic organs, had increased intra-abdominal pressure, and caused the weakened vessel walls to rupture. This process, occurring at a time when a spontaneous rupture of a Graafian follicle took place, did not stop within the physiological limits. Should the rupture occur in a slightly immature follicle even without any demonstrable pathology it might be thought that the process which controls the subsequent hemorrhage is as undeveloped as the follicle. Thus the earlier the rupture occurs the more severe the hemorrhage might be. There is, as yet, insufficient evidence to prove or disprove this conjecture. Schumann's⁷ theory of increased pressure and hyperemia might be the sole explanation for the hemorrhage, but if this were true it would certainly occur more frequently. Coitus, on the other hand, seems to play an important part from the frequency with which it is associated in the reported cases with the onset of the pain. Assuming that the time of ovulation is ten to fourteen days before menstruation, other case reports besides those submitted would seem to disprove the theory that only the immature follicles result in symptomatic hemorrhage, since far more of these cases occurred a week before menstruation than occurred earlier or later.

IMPORTANCE OF A DETAILED HISTORY FOR CORRECT DIAGNOSIS

The history of the onset of the symptoms as well as their characteristics, with particular reference to the menstrual history, is very important in making this diagnosis. It should be the ideal to make a correct diagnosis in every case as to the etiology of the symptoms, whether the patient is to be operated or not. With a sufficient hemorrhage from the rupture to present a marked shock picture it is often impossible to make an accurate diagnosis until the patient has been

operated. This is especially true in this condition since, if there is marked hemorrhage, the picture is almost typical of ruptured ectopic or severe acute appendicitis. Zachary Cope,⁹ in his monograph on the acute abdomen, advises a carefully detailed history. He points out the pitfall of disregarding pertinent history because the patient adds irrelevant explanations of his own symptomatology. He further states the importance of getting a detailed menstrual history in any young woman with abdominal pain, not only that of her immediately preceding period but also the dates and characteristics of her last few periods. With particular reference to ruling out a ruptured ectopic, intermenstrual bleeding or spotting should be determined. It has been our experience that rupture of a Graafian follicle may occur at any time in the menstrual cycle. In the patients presented here, all except one were married and had had one or more pregnancies with no febrile postpartum course. None of the cases presented any past history suggestive of previous pelvic inflammatory disease. Two of the cases occurred shortly after or during coitus. One of the patients was operated with a preoperative diagnosis of appendicitis and the tear and hemorrhage from the ovary were discovered at operation. In all the cases presented, within normal limits, normal menstrual histories preceded the attack.

OUTLINE OF SYMPTOMS

1. Acute pain is a first and constant finding.
 - (a) It is in either right or left lower quadrant at first definitely localized.
 - (b) It comes suddenly, sharp, and stabbing.
2. Generalized abdominal pain and tenderness follow later.
 - (a) Additional minor sharp pains on side of rupture may occur with generalized pain.
3. Coincident and additional symptoms.
 - (a) Feeling of faintness may occur with pain.
 - (b) Nausea and occasionally vomiting are present.
 - (c) There is a desire to defecate if rupture is on left side.
 - (d) Chilliness without a chill may accompany symptoms.
 - (e) Patient shows picture of shock if hemorrhage is continuous and severe.
 - (f) Unilateral or bilateral shoulder pains may be present if hemorrhage travels up the lateral gutters.
4. Symptoms as a result of intra-abdominal hemorrhage.
 - (a) There is an elevation of pulse in ratio to hemorrhage.
 - (b) Temperature is normal for several hours, then there is a slight rise.
 - (c) Respirations are normal unless hemorrhage is severe.

- (d) Marked tenderness without localized rigidity is found in the abdomen.
- (e) In most cases a rebound tenderness is present which indicates a peritoneal irritation.
- (f) Hyperesthesia of lower abdomen is absent.
- (g) Dullness above symphysis is present only with massive hemorrhage.
- (h) Early blood examination is negative.
- (i) Pelvic examination reveals:
 - 1—Normal uterus and cervix.
 - 2—Painful palpation on side of rupture.
 - 3—Soft, boggy mass in cul-de-sac usually twenty-four hours after onset of pain.

Pain in either the right or left lower quadrant, coming on suddenly, is a constant finding. This is the first symptom, and is sharp and stabbing in character, being definitely localized at first. Later there is generalized abdominal pain and tenderness. Coincident with the pain the patient may or may not describe a feeling of faintness or a "sinking feeling." After the pain becomes generalized the patient may experience additional minor sharp pains, usually on the side of the rupture. These symptoms are followed by nausea and occasionally vomiting. In some cases where the rupture has occurred on the left there may be a desire to defecate. Chilliness but no actual chill may accompany the other symptoms. Where there is continued severe hemorrhage the patient will show the picture of shock and, as the hemorrhage travels up the lateral gutters, the patient may complain of unilateral or bilateral shoulder pain.

Such cases of severe hemorrhage are difficult to differentiate from ruptured ectopic pregnancies and although a diagnosis should be attempted it is most important to recognize the acute surgical abdomen. On examination the pulse may or may not be elevated in rate depending, of course, on the extent of the hemorrhage. The temperature for several hours after the onset remains normal and then rises slightly. In the cases presented where the diagnosis was confirmed there was an average temperature below one hundred degrees. Respirations are usually not increased unless the hemorrhage is of a severe grade and the patient first seen several hours after the rupture. Abdominal examinations show moderate to marked tenderness although no localized rigidity is present.

In most cases there is present some rebound tenderness which is only of value as an indication of peritoneal irritation. Hy-

peresthesia of the lower abdomen on the side of the pathology is absent, since this sign is only a reflex segmental irritability from inflammation of the appendix and cecum, and the same spinal segment gives rise to the ilio-inguinal and iliohyogastric nerves. Only in cases of massive hemorrhage can dullness above the symphysis or in either flank be detected. Blood examination, if made early, will show no gross changes. Pelvic examination will reveal a normal uterus and cervix with no escape of blood from the cervix. The uterus may or may not be tender to movement but palpation on the side of the rupture usually is painful. Of course the presence of an indurated parametrium or a tubal mass, regular or irregular in outline, would lead to a different diagnosis. There frequently is a soft, boggy mass in the cul-de-sac which, however, may not be detectable until twenty-four hours after the onset of the pain.

SURGICAL OR CONSERVATIVE TREATMENT

As in all intra-abdominal conditions one should be on the watch for the acute surgical abdomen. Severe acute pyelitis should be kept in mind and a urine specimen examined. The localization of the symptoms to the lower abdomen should not lead to carelessness in considering the upper abdominal conditions. A twisted pedicle on a pelvic tumor should be easily differentiated if a careful examination is made. In the more serious hemorrhages a ruptured ectopic would be a difficult differential to make and is, after all, unessential as long as the need for immediate laparotomy is recognized. My plea is for conservative treatment of the milder degrees of hemorrhage in an acute abdomen. There are other causes of hemorrhage from the ovary which could give an identical picture and could not be differentiated from a ruptured follicle but should be treated conservatively also. (1) Hematomas of the corpus luteum with leakage into the peritoneal cavity. (2) Endometrial cysts with leakage. (3) Hemorrhage into a Graafian follicle cyst without rupture. (4) Hemorrhage into any abdominal or pelvic tumor where the tumor cannot be felt by abdominal or pelvic examination.

CONFIRMED CASE REPORTS

Case 1.—Mrs. P. W., aged thirty-four. The patient was taken with a sudden pain in the right lower abdomen about six o'clock in the morning. This was followed by nausea and she vomited once. The pain soon became generalized over the abdomen.

The nausea increased but the patient did not vomit further. She had been constipated for some time and had been seen before with abdominal discomfort for which an x-ray had been ordered and a diagnosis of chronic appendicitis had been made. The patient's last three menstrual periods had been perfectly normal and her next one was due in six days. There had been no spotting. She felt chilly but had had no definite chills. Physical examination showed marked tenderness over the lower abdomen with especial localization on the right. There was slight rigidity. Pelvic examination was entirely negative. There was some rebound tenderness but there was no hyperesthesia of the right lower abdomen. Her temperature was 99.6 and her white blood count was 7,200. Her past history was essentially negative. No previous operations. One pregnancy three and one-half years ago with a normal postpartum course. No history suggestive of pelvic inflammatory disease.

A diagnosis of an acute exacerbation of a chronic appendicitis was made and immediate laparotomy done. At operation the appendix was found to have a small adhesive band at the tip but was not acutely inflamed. An appendectomy was performed. There was some free blood in the pelvis and examination of the right ovary showed a small tear at the site of recently ruptured Graafian follicle. This was closed with a plain catgut suture and the abdomen closed without drainage. Her post-operative course was uneventful.

Case 2.—Mrs. H. H., aged twenty-four. The patient was perfectly well on going to bed and experienced some pain during coitus. Shortly after this there was a sudden, sharp pain in the right quadrant not associated with nausea and vomiting until a few hours later. The pain continued with little stabbing increases. She had never had a previous similar attack. Her menstrual history was negative and there was no associated dysuria or constipation. This attack occurred thirteen days prior to her next period. Past history and family history were negative. She had been married two years without pregnancy or any history suggesting pelvic inflammatory disease.

Abdominal examination showed some tenderness in the right lower quadrant without any rigidity or tumor masses palpable. Pelvic examination was negative except for tenderness in the right ovarian region. The next day, on pelvic examination, a soft, boggy mass could be felt in the cul-de-sac. A diagnosis of ruptured Graafian follicle was made and needling the cul-de-sac revealed the presence of some bloody serum. The patient made a rapid recovery and was given relief by bed rest and hot vaginal douches. The mass in the cul-de-sac disappeared. Her temperature at no time was above 99.4.

The other cases are given here presenting similar histories and physical findings in whom the diagnosis of ruptured Graafian follicle was made but where the diagnosis was not confirmed and treatment was conservative.

Case 3.—Mrs. A. J., aged twenty-six. The patient was seized with a sudden, sharp pain in the lower abdomen following intercourse. Some nausea but no vomiting. No urinary symptoms, diarrhea, or constipation. Menstrual history perfectly regular. The patient had had a normal, spontaneous delivery several months before, with no postpartum fever. There was no previous inflammatory history or previous operation. For several hours after the onset, additional sharp pains recurred. The next day there was a mass in the cul-de-sac which disappeared, as did the tenderness and pain, in a few days. Pelvic examination at the time of attack showed only ovarian tenderness.

Case 4.—Mrs. J. M., aged twenty-six. Sudden,

sharp pain in the lower abdomen which could not be localized but which radiated to the vaginal vault. Not related to coitus. The pain soon became generalized. There was no vomiting, though some nausea. The patient got out of bed shortly after the onset and there was some dizziness present which recurred the next day. There were no urinary symptoms, diarrhea, or constipation. Appendectomy had been done ten years before. Examination was negative except for tenderness and some spasm on the right. The condition cleared up spontaneously in four days. The attack occurred four days prior to the next menstrual period which was two days late. The menstrual history had been perfectly regular.

Case 5.—Mrs. J. H. F.—Typical history as given above. No relation to coitus. The mass in the cul-de-sac appeared on the second day and the patient made an afebrile spontaneous recovery with conservative treatment.

CONCLUSIONS

1. Mild hemorrhage from a ruptured Graafian follicle cyst may or may not give

the picture of an acute intra-abdominal condition.

2. Careful recognition of the mild hemorrhage is essential for proper treatment.

3. Mild hemorrhage which gives the picture of an acute abdomen may be treated conservatively if it is properly diagnosed.

BIBLIOGRAPHY

1. Greenhill, J. P.: Amer. Jour. Obst. and Gyn., 22:902, 906, 1931.
 2. Hadden, D.: Amer. Jour. Obst. and Gyn., 7:600, 601, 1924.
 3. Johnson, V. E.: Amer. Jour. Surg., 9:538, 544 (Sept.), 1930.
 4. Mathieu and Holman: Western Jour. Surg. (Sept.), 1930.
 5. Novak, Emil: Jour. A. M. A., 48:1160-1162, 1917.
 6. Petta, Giorgio: (Hemoperitoneum of the highest degree due to rupture of a Graafian follicle) II Policlinico
 7. Schumann, E. A.: Jour. A. M. A., 77:692, 696, 1921.
 8. Wilfred Shaw: Amer. Jour. Obst. and Gyn., 23: 1929.
 9. Cope, Zackary: Diagnosis of the Acute Abdomen. 1932. 6th Edition.
- 216 S. STATE STREET

A SURVEY OF SENSITIZATION IN STUDENTS OF THE UNIVERSITY OF MICHIGAN*

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Human hypersensitiveness—A person is said to be hypersensitive when he reacts with characteristic symptoms to certain substances in amounts harmless to normal individuals. How many people are in the United States suffering with this malady in any of its different forms? This is a question somewhat difficult to be accurately answered. Persons do not die of eczema or hives or hay fever and very few do of asthma, therefore vital statistics are of little value to the investigators. Hospitalization of these cases is rare, consequently one cannot turn to the hospital records for information. However, some authorities in allergic diseases have made special studies in their endeavor to answer that question. Dr. Arthur F. Coca¹ estimates the incidence of hay fever in this country as less than one per cent of the exposed population. Dr. W. Scheppegegrell² concludes that 1.5 per cent of the population of the United States between the ages of ten and sixty are sufferers from hay fever, or about 1 per cent of the total population, approximately 1,100,000 people. Drs. Robert A. Cooke and W. C. Spain³ think that 3.5 per cent of the population of New York and vicinity exhibit hay fever or bronchial asthma. Drs. Robert A. Cooke and A. VanderVeer, Jr.,² report about 7 per cent of the population as suffering with human hypersensitiveness, including even the weakest degree.

In the University of Michigan, at the

Health Service Unit, sensitization test is given to any student who shows indication for it. In 1930 we began to study the new students entering this institution in order to make a survey of the prevalence of this group of symptoms known as human hypersensitiveness.

On the Entrance Health Examination blank, under the heading "Family Health," certain diseases which have appeared among relatives are to be checked, *i.e.*, "sick headaches," "asthma," "food poisoning," "digestive upsets." Under the student's personal "Past Health" the following illnesses among others are to be checked, if the student has had them: "asthma," "hay fever," "eczema," "hives," "digestive upsets," and "food poisoning," giving approximately the age at which any of the complaints has appeared. Under his personal "Present Health," the student is asked to check sick-

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TABLE I. DISTRIBUTION OF SENSITIZATION GROUPS (NEW STUDENTS)

Groups	1930*				1931†				1932				Totals			
	Male	Female	Total	%	Male	Female	Total	%	Male	Female	Total	%	Male	Female	Total	%
I. Eczema; Rose fever; Hay fever; Asthma	181	*		10.	222	88		11.8	236			14.	639	188		11.9
			181	10.			310	10.7		100	336	13.2			827	11.9
II. (a) Urticaria; (b) G. I. upsets; Food idiosyncrasy; Frequent "colds"; Headache, etc., with <i>good</i> family history of sensitization	429	*		23.7	388	193		11.5	378			22.4	1,195	350		22.29
			429	23.7			581	23.6		157		20.7				22.23
								21.5			535	21.9			1,545	22.27
III. G. I. upsets; Food idiosyncrasy; Frequent "colds"; Headache, etc., with <i>no</i> family history of sensitization	241	*		13.3	252	76		13.5	202			12.	695			12.9
			241	13.3			328	9.3		59	261	7.7		135		8.5
								12.2				10.7			830	11.9
IV. <i>No</i> symptoms, so far with <i>good</i> family history of sensitization	325	*		17.9	361	173		19.3	289			17.1	975	356		18.18
			325	17.9			534	21.1		183	472	24.				22.6
								19.9	577			19.3			1,331	19.19
V. <i>No</i> symptoms and <i>no</i> family history of sensitization	632	*		34.9	648	287		34.6				34.3	1,857			34.6
			632	34.9			933	35.1		258	835	34.		545		34.6
								34.7				34.2			2,402	34.6
Totals	1,808	907		66.4	1,871			69.5	1,682			68.96	5,361			68.36
				33.6		817		30.5		757		31.04		1,574*		31.64
			2,715				2,688				2,439				6,935*	
Groups I and II													1,834			34.21
														538		34.18
															2,372	34.2
Groups I, II and IV													2,809			52.39
														894		56.79
															3,703	53.39

*The figures for the women in 1930 are not included. Many of the women's Entrance Health Examination blanks had no sensitization questionnaire.
†Sixty-four students not classified were not included (10 men, 54 women).

ness which he has now or which he has from time to time. There he finds among other complaints "headaches," "frequent head colds (more than three a year)," and "abdominal cramps (gas on stomach)." These blanks are checked by the parents as correct in about 80 per cent. By going over these entrance blanks we are able to classify each new student into one of the following groups:

Group I. Those who have checked eczema, rose fever, hay fever, or asthma.

Group II. Those who have checked (a) urticaria, (b) gastro-intestinal upsets; food idiosyncrasy, frequent "colds," headache, etc., with good, *positive family history of sensitization*.

Group III. Those who have checked gastro-intestinal upsets, food idiosyncrasy, frequent "colds," headaches, etc., with *no family history of sensitization*.

Group IV. Those who have had, so far, no symptoms of illness leading one to suspect them as sensitized people, but have checked a *positive family history of sensitization*.

Group V. The balance, that is, those who have checked no symptoms and no family history of sensitization.

In Table I is shown a record of students entering in the falls of 1930 (women excluded), 1931, and 1932, classified in these five groups.

When one studies this table one is surprised to find that year after year the percentages in each group are almost the same. The greatest variation in sex is 4.3 per cent, occurring only once, in Group III for 1932. The most extraordinary identity is found on the total sex averages for three groups. Group I, II and V give, respectively, equal average for men and women (11.9 per cent in Group I, 22.2 per cent in Group II, and 34.6 per cent in Group V).

Another observation is made in Groups III and IV, where one sees the largest variation. In Group III one finds an average of 4.40 per cent higher in men than in women, while logically in Group IV one sees the reverse, that there is also a difference of 4.42 per cent but the higher percentage is in the women.

Attention should be called to the total percentages of the different groups, especially to those concerned with sensitization,

(Group I, II, IV). Group I, which includes maladies accepted as sensitization, gives 11.9 per cent, *i.e.*, we have found that at least 12 per cent of the incoming students of the University of Michigan have had eczema, rose fever, hay fever or asthma. There is no doubt that these 12 per cent should be studied from a sensitization point of view. Group II gives 22 per cent of these students who also need to have the sensitization test. When Groups I and II are united, one sees that 35 per cent of the student body need the test. If to these two groups (I and II) one adds Group IV, the potential cases, one finds that 54 per cent of college students (over half) need the complete study of sensitization.

CONCLUSIONS

1. The importance of the phenomenon of human hypersensitiveness in problems of health and disease needs more general recognition. Because of the progressive nature of symptoms which become more difficult with age, it needs attention in college students.

2. On the basis of the history of nearly 7,000 entering students we conclude that about 35 per cent belong to the class of sensitized persons.

3. On the same basis we find 20 per cent of potential cases, which later in life may or may not develop symptoms of sensitization.

4. More than half (54 per cent) of men and women college students should receive a complete sensitization study.

5. Success in handling this group of patients depends upon:

- (a) The attitude of the physician toward the patient.
- (b) The completeness of tests and the removal of offending agents.

6. Every case must be studied as an individual in conjunction with other specialties in medicine.

BIBLIOGRAPHY

1. Coca, Arthur F., Walzer, Matthew, and Thommen, August A.: *Asthma and Hay Fever in Theory and Practice*. Charles C. Thomas, Springfield, Ill., 1931.
2. Cooke, Robert A., and VanderVeer, H., Jr.: *Jour. Immunol.*, 1:201, 1916.
3. Scheppegrell, W.: *Hay Fever and Asthma*, Philadelphia, 1922.
4. Spain, W. C., and Cooke, Robert A.: *Jour. Immunol.*, 9:521, 1924.

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EDITORIAL

MEETING THE SITUATION

The action of the House of Delegates of the Michigan State Medical Society at the special meeting at Flint has been the subject of state-wide and nation-wide comment. What actually took place was the adoption of the following: (1) Approval of general principle of the plan of Mutual Health Service. (2) Approval for discussion of the plan with employers and employees. (3) Approval of an action to determine the legal status of the Mutual Health Service and the necessary action for the organization of Mutual Health Service. (4) Approval of the preparation of a final detailed plan of the Mutual Health Service for presentation to the House of Delegates for final action.

The last number of this JOURNAL contained a supplement of twenty-seven pages of reports and discussion, but these recommendations constitute the final action of the House of Delegates. It will be seen that no final commitment to any definite policy was attempted. The whole matter is left with individual county societies with the approval of the deliberative body of the society, the House of Delegates.

The medical profession have done their best to render service where and when needed, frequently at great personal sacrifice. They have assumed what should have been a community burden so that the community has come to look upon the care of

the indigent sick as the proper function of the medical profession. However, no profession can continue indefinitely to shoulder what should be a community function, any more than merchants can continue to minister to the physiological demands of the unemployed. Something must be done. What that something is, the profession is doing its best to determine through the efforts of the Special Committee on Economics who have seriously studied the economic and social phases of medicine with the view to determining the wisest course for the future. The committee welcomes suggestions and criticisms. They have no other interest than the good of the society as a whole.

Theirs is a long range view. The social agitator has been at work and is still active with his propaganda. He has his influence. He cannot be ignored. Silence on the part of the profession amounts to acquiescence.

As already stated, the medical profession have endeavored to meet the situation at their own expense. In one county (Wayne) a plan which appears to have many things in its favor is in its incipency. The idea is group medicine by which the members of the county society constitute the group. The object is service to the wage earner when he needs it, regardless of his ability to pay at the time. If that service is in the nature of a major operation, through agreement with the hospital, the attending physician and surgeon, the cost is spreaded over an entire year, payment to be made by the employer (by agreement with the employee) to the central bureau, the county society, to be pro rated each pay day to the various persons concerned. The plan applies to medical service as well rendered to workers or their families in their own homes, including the laboratory and other specialist service.

There is nothing in this plan that is antagonistic to the endorsement of the report of the Committee on Economics. The two are complementary and there is still room for any other effective movement on the part of county societies for the solution of their problems.

There never was greater need than now for deliberation as well as harmony among members of the medical profession. There should be a concerted effort to procure all the facts and to form opinion only on evidence.

X-RAY EXAMINATION OF THE GASTRO-INTESTINAL TRACT

Elsewhere in this number of the JOURNAL OF THE MICHIGAN STATE MEDICAL SOCIETY appears a paper on Roentgenologic Aspects of Gastroenterology which has been read before three county medical societies of the Upper Peninsula, a sort of peripatetic post-graduate course. We are pleased to put this in permanent form for not only the members of the Upper Peninsula County Societies but also for the entire membership of the Michigan State Medical Society.

The x-rays were discovered by Roentgen, a physicist, in 1895. It is significant that the first use sought for them was as a diagnostic agent in medicine. Only recently have the x-rays found their place as diagnostic factors in industry, where they are used to check up for flaws in castings. In May, 1896, experiments were made on the hollow abdominal viscera of the guinea pig by using one of the heavy salts of lead—poisonous of course. Bismuth subnitrate in suspension was used by Cannon of Boston beginning in 1897 for animal experimentation on cats. Following this, bismuth subnitrate was used on the human but was found unsatisfactory in the quantity necessary to do satisfactory diagnostic work. In 1910 barium sulphate, the insoluble salt of barium, was discovered to possess all the properties necessary for an opaque medium. It was not only non-toxic but neutral so far as astringent or laxative properties were concerned. From this date developed the ideal facilities for examination of the alimentary tract by means of the x-rays. The invention of the hot cathode tube by W. D. Coolidge was also an important factor in perfecting a technic of gastrointestinal examinations.

With improvement in apparatus and opaque media, roentgenology affords facilities for very fine diagnostic work by those trained as roentgenologists. It should be remembered, however, that x-ray equipment bears the same relation to the operator as the scalpel to the surgeon. Once either is acquired, a great deal of training and specialized knowledge are necessary to make either a surgeon or a roentgenologist. The paper presented at length will give the general medical reader some idea of the *modus operandi* of examination of the alimentary tract. However, after old Izaak Walton,

when he had given a detailed explanation of the gentle art of the angler, the writer of this lengthy paper might well say, "I have given you my fiddle, but I haven't yet given you my fiddlestick."

DR. WILLIAM H. WELCH

The death of Dr. William H. Welch, which took place early in May at the advanced age of eighty-four, removed one of the great benefactors of the race. Dr. Welch's career and influence as professor of pathology of Johns Hopkins University have been universally recognized, though the scope will never be accurately known. He occupied a prominent place among such immortals as Koch, Pasteur, Lister, Ross, and others prominent in medical history.

Yet the acclaim is not so great as that following the passing of a great general and it is doubtful if the greatest names in science and medicine will receive more than mention when the political and social history of the present and immediate past comes to be written.

There is little question that disease has had as great a devastating effect upon mankind as war. Yet billions of dollars are appropriated for defense against alleged foreign enemies; and those who lead armies to victory, and in some instances to defeat, are heralded as the nation's heroes. We are not contributing to the subject of pacificism. However, to quote a hackneyed expression, "Peace has its victories no less renowned than war." The eminent medical scientist is a great humanitarian. His efforts for the race are constructive and his researches are towards the destruction of man's common enemies.

The man of science receives recognition from institutions of learning in the shape of honorary degrees. The man on the street, however, accepts the blessings of health as though they were not bought with a price. He is little concerned with the martyrs of science. The reward of the humanitarian consists rather in a consciousness of having accomplished a constructive task in the way of making the world a better place in which to live. Of the two, the general and the man of science, the latter at the final reckoning will be *sub specie aeternitatis* the greater.

TELEPHONE RATES

During the past month the matter of telephone rates has been thrashed out between the Public Utilities Commission and the Michigan Bell Telephone Company with a result that does not bring much satisfaction to the public and particularly to the medical profession. Next to the doctor's automobile the telephone has come to be a professional necessity. After much agitation automobile licenses have been lowered, but the charge for telephone service remains practically the same. The rental for the so-called cradle 'phone has been eliminated after eighteen months' rental has been paid. In other words the lessee actually pays for an instrument which in the end belongs to the company.

According to a recent news item, the number of telephone subscribers in the Detroit district has decreased by 100,000. If this be true, the telephone is of much less value to those subscribers who have maintained their 'phones throughout the depression. A wiser policy, it seems, would have been to lower the rates in keeping with what erstwhile subscribers could afford to pay, a policy which would have avoided the impairment of the service.

We are led to wonder what water rates would be today if this public service were under the control of a private corporation with virtual monopoly rights.

SLEEP

Sleep and rest are among the most important factors in the restoration to health of persons afflicted with curable disease. Among the more important drugs are hypnotics, and pharmaceutical concerns vie with one another in the production of these agents, each claiming for its product the property of producing sleep with the fewest untoward after-effects. Man in both health and disease is wont to seek escape from reality. Sometimes he seeks it by way of narcotics, or by alcoholic stimulation. The escape, so-called, is best, however, when it follows normal fatigue, as sleep without the further aid of hypnotic drugs; all of which is prefatory to the subject as described in our best poetry and prose.

Edward Young, an eighteenth century poet, in his *Night Thoughts* describes

Tired nature's sweet restorer, balmy Sleep!
He like the world, his ready visit pays
Where Fortune smiles; the wretched he forsakes,
Swift on his downy pinion flies from woe,
And lights on lids unsullied with a tear.

Praed (early nineteenth century) sees it in a humorous light as during the prolonged debate on the Reform Bill in the British House of Commons, the speaker of the house, who fills the rôle of chairman, is discovered sound asleep:

Sleep, Mr. Speaker; sweet to men
Is the sleep that cometh but now and then;
Sweet to the sorrowful, sweet to the ill,
Sweet to the children that work in a mill;
You have more need of sleep than they—
Sleep, Mr. Speaker; sleep, sleep while you may!

Coleridge in the *Rime of the Ancient Mariner* welcomes it as surcease from anxiety on the broad expanse of ocean:

Oh sleep! it is a gentle thing,
Beloved from pole to pole!
To Mary, Queen, the praise be given!
She sent the gentle sleep from Heaven,
That slid into my soul.

John Keats describes it as a

Soft embalmer of the still midnight,
Shutting, with careful fingers and benign,
Our gloom-pleas'd eyes, embower'd from the light,
Enshaded in forgetfulness divine:
O soothest Sleep! if so it please thee, close
In midst of this thine hymn my willing eyes,
Or wait the amen, ere the poppy throws
Around my bed its lulling charities.

Of course, any account of sleep should include a Shakespearean description. Shakespeare refers to the horror of a guilty conscience which renders sleep impossible.

Methought I heard a voice cry, "sleep no more! Macbeth does murder sleep!" The innocent sleep, Sleep that knits up the ravell'd sleeve of care, The death of each day's life, sore labor's bath, Balm of hurt minds, great nature's second course, Chief nourisher in life's feast.

And again we have the wonderful apostrophe to sleep in *Henry the Fourth*:

O sleep! O gentle sleep!
Nature's soft nurse, how have I frighted thee,
That thou no more wilt weigh my eyelids down
And steep my senses in forgetfulness?
Why rather, sleep, liest thou in smoky cribs,
Upon uneasy pallets stretching thee,
And hush'd with buzzing night-flies to thy slumber,
Than in the perfum'd chambers of the great,
Under the canopies of costly state,
And lull'd with sound of sweetest melody?
O thou dull god! why liest thou with the vile
In loathsome beds, and leav'st the kingly couch
A watch-case or a common 'larum bell?
Wilt thou upon the high and giddy mast
Seal up the ship-boy's eyes, and rock his brains

In cradle of the rude imperious surge,
 And in the visitation of the winds,
 Who take the ruffian billows by the top,
 Curling their monstrous heads, and hanging them
 With deaf'ning clamour in the slippery clouds,
 That with the nurly death itself awakes?
 Canst thou, O partial sleep! give thy repose
 To the wet sea-boy in an hour so rude,
 And in the calmest and most stillest night,
 With all appliances and means to boot,
 Deny it to a king?

Perhaps the finest reference ever made to sleep is that by the Spanish novelist, Cervantes, quoted recently in this JOURNAL and repeated here as a climax:

"Now blessings light on him that first invented this same sleep! It covers a man all over, thoughts and all, like a cloak; it is meat for the hungry, drink for the thirsty, heat for the cold, and cold for the hot. It is the current coin that purchases all the pleasures of the world cheap, and the balance that sets the king and the shepherd, the fool and the wise man, even. There is only one thing, which somebody once put into my head, that I dislike in sleep; it is, that it resembles death; there is very little difference between a man in his first sleep, and a man in his last sleep."

THE WRITING OF CONTRIBUTED PAPERS

Writing is an art and as perfection is the goal which is seldom attained there is plenty of room for lifelong effort. The object of writing is to convey one's thoughts clearly and forcibly to the reader. It is reasonable to assume that clear thinking should precede any attempt to write. Unless a person can marshal his ideas clearly, it is too much to expect him to express himself well on the written or printed page. We wish to say that many doctors write exceedingly well; and in the same breath, we might also say that there are others who might write a great deal better than they do, if they devoted more attention to the study of good models of English.

There are a number of small handbooks* on scientific writing which every aspirant to authorship would do well to study. Among the commoner faults which should be avoided is an abbreviated style. Some doctors, particularly in writing up case histories, present papers for publication which are

*The Writing of Medical Papers by Mellish published by W. B. Saunders Company, Philadelphia, and a small book on the same subject bearing the imprint of the American Medical Association are serviceable and should be consulted by every medical author: Notes on the Composition of Scientific Papers by the late Sir Clifford Allbutt is of particular interest since it goes more into detail in the subject of Composition of Scientific Papers. Macmillan and Company are the publishers. On the Art of Writing by Sir Arthur Quiller-Couch (Putnam) is a very interesting contribution for those who wish to study the Art in greater detail.

scarcely more than notes intelligible only to the writer himself. There is a disposition to leave out such words as *a* and *the*. Sometimes the subject is omitted from a sentence and some times the predicate is absent. Another fault is that of typewriting papers single space, which will not permit of editing or supplying the missing words by the editor, whose function it is to make these contributions read intelligibly. Here is a sentence culled at random: "Physic and enema by mother produced bowel movement but was still nauseated." We are tempted to quote at length but to avoid plagiarism we believe in always giving credit to the author of our quotations. To do this, however, might cause embarrassment, so we shall refrain. If papers were always written double space the editor would be in a position to supply the missing parts of a sentence. Attention is drawn to page iv, advertising section, in which is presented advice to prospective contributors to this JOURNAL. Mistakes may be avoided by consulting one or two of the little manuals on the writing of scientific papers. While, owing to the exigencies of space, short papers are preferable to long ones, no attempt should be made to shorten the paper by leaving out words or using abbreviations which are not generally understood. In fact abbreviations have very little place in literature of any description.

THE DEVELOPMENT OF THE ELECTROCARDIOGRAPH*

Animal electricity was unknown before the time of Galvani, and it has been only since that time that the knowledge which provides the physiological basis for electrocardiography has accumulated. Nevertheless, events in biology and physics converged during the preceding two centuries upon Galvani and led him to formulate the idea of electricity as a characteristic of living tissue. Since Queen Elizabeth's physician, Gilbert of Colchester, first announced his views on the subtle effluvium or "electric" which he obtained by rubbing amber, resin, glass and gem stones, a whole body of information on electricity had grown up. Von Guericke (1672) had devised the first elec-

*This historical editorial is one of the series appearing in this JOURNAL on the general subject of The Evolution of Methods and Devices that have aided in the Growth of Medicine and Surgery.

trostatic machine, which had been improved subsequently so that a nearly continuous supply of powerful electricity was available. The "Leyden jar," a condenser, in which electrical energy could be stored and from which discharges could be elicited, had been devised in 1745. Electric sparks, the electric shock, the transmission of electricity over a conductor and the nature of conductors and insulators were known through the work of Gray and Dufay. It was recognized that the human body transmitted electricity and that small animals could be killed by a sufficient electric shock. Benjamin Franklin had demonstrated the identity of the discharge of lightning with electricity (1752). Coulomb had discovered the laws of electrical attraction and repulsion. It was common knowledge that lightning rods protected houses and that current could be transmitted as far as four miles over an electric wire. Physicians, since 1739, had reported cures after treatment of patients by electrical discharges. The discharge of the torpedo ray which had puzzled men for centuries had been demonstrated by Walsh (1773) as an electrical phenomenon.

Certain features of biological science likewise influenced Galvani's investigations. Such anatomists as Fabricius (1618), Croone (1664), Steno (1667) and Borelli (1680) had studied some of the mechanical features of muscular movement, and Swammerdam, following 1658, had studied the actual contraction of the muscles of frogs by stimulating the nerve mechanically or with chemicals. Robert Whytt (1751) and Von Haller (1755) had considered the reflex control of movement and the intrinsic irritability of muscles respectively.

At this stage, Galvani began his work. He amplified the earlier experiments of Swammerdam by stimulating the nerves of frogs' legs with charges of static electricity from Leyden jars. After several years of study, he attempted to find the effect of atmospheric electricity upon the frog material and accidentally came upon a phenomenon for which he is chiefly known. Frogs' legs were suspended by copper hooks from an iron balustrade out of doors. It was noticed that spasms developed in the muscles when the wind blew the tissue against the iron of the balustrade. Further work demonstrated that a spasm resulted when the nerve and muscle were touched by any arc formed by two metals, such as copper and

iron. Galvani interpreted the phenomenon as due to electricity arising in the muscle and circulating from the muscle, through the metallic arc and back to the muscle again. The twitching was considered an evidence of animal electricity, a term which he coined (1791). Volta immediately opposed this view, maintaining that the electricity was generated at the contact between the two metals, and that the convulsion in the frog muscle was merely an indication of the current so generated. A second experiment by Galvani in which the nerve of a frog preparation was brought into contact with an injured muscle likewise elicited a response, and in this case, no metal was used.

A dozen investigators repeated the experiments, agreeing with the interpretation of either Galvani or Volta. Von Humboldt (1797) recognized the value of the views of both men. He believed that Volta's explanation of Galvani's experiment was correct, but he also believed that animal electricity was an inherent feature of the living tissue. He furthermore related the electrical phenomenon of the frog muscle to that of the electric eel. At this period, Volta (1799) conclusively proved that electricity could be generated from metals. He stacked alternate discs of copper, zinc and wet cloth in a vertical arrangement and found that a continuous current, the strength of which was proportional to the height of the pile, could be obtained. Attention was immediately directed away from the study of animal electricity, and this phenomenon was ignored until galvanometers were first devised. The voltaic pile which with some modifications led later to the modern storage battery initiated many researches of a purely electrical nature.

Oersted in 1819 studied the effect of current from a voltaic pile upon the magnetic needle of a compass. He noted that the needle was deflected from its north to south direction when a wire carrying the current was placed in proximity to the needle, and that the extent of deflection corresponded with the amount of the current. In the next year, Schweigger found that, if a current were made to pass through a coil of twenty to a hundred turns of wire surrounding a magnetic needle, the effect of the current on the needle was more noticeable. On this principle, he constructed the first galvanometer, which was called the "multiplier." Nobili, in 1825, devised a more sensitive instru-

ment called the "astatic multiplier." This consisted of a doublet of nearly equivalent magnetic needles mounted parallel, but in opposite directions. The effect of the earth's magnetism was largely counteracted and weak currents passing through a coil of several thousand turns of wire caused a noticeable deflection of the indicator point. With this galvanometer, Nobili, in 1827, was able to detect currents in frog preparations, but he considered the effect due to temperature differences in the muscle, rather than an evidence of animal electricity.

The existence of animal electricity was not definitely proven until 1838 when Carlo Matteucci restudied the electrical phenomena of nerve-muscle preparations. Matteucci measured the potential difference between a damaged muscle and its nerve by means of the galvanometer, identifying what he called muscle current or proper current. He indicated furthermore that the electricity generated within the muscle and nerve was capable of causing convulsions in another muscle-nerve preparation, the action of the latter, known as the galvanoscopic frog, revealing the electrical energy of the first preparation in a manner similar to that of the galvanometer deflection. He likewise investigated the electrical organs of the torpedo ray, studying the innervation, the cerebral control of discharge, and the character of the shock under various conditions of temperature and fatigue. The charge of the electric organ was demonstrated both by the convulsive kicking of frog preparations placed upon the back of a fish and by galvanometric measurements. A small part of the electric organ, the size of a pinhead, when isolated from the ray, was capable of initiating a response in the galvanoscopic frog. Matteucci believed that animal electricity, like animal heat, was a consequence of the chemistry of tissues.

After 1843, for a period of about thirty-five years, Emil DuBois Reymond of Berlin dominated the field of electrophysiology. He repeated and extended Matteucci's experiments upon the current of muscle and nerve and upon the currents of the electric catfish of the Nile. The superior measurements which DuBois Reymond made were, to a large extent, due to the use of better galvanometers than were available in Matteucci's time. The astatic galvanometer, although sufficiently sensitive, was difficult to use, since it required about thirty seconds

for the indicator to stop oscillating after a deflection. The Wiedemann-Bussole and the D'Arsonval galvanometers were less troublesome in this respect, so that they became indispensable to the electrophysiologist who wanted to follow electrical changes in tissues. In the first instrument, a small ring-shaped magnet was suspended between two coils of twenty thousand turns of wire each. As the tissue current passed through the coils, the magnet and its attached indicator twisted to one side or the other. In the second galvanometer, the relation of the magnet and coil was reversed. A fine coil bearing the current was suspended between fixed magnets; the torsion of the coil and the indicator mirror attached to it was proportional to the current passing through the coil. DuBois Reymond devised non-polarizing electrodes of zinc and zinc sulphate and further increased the accuracy of his galvanometers. The current found in muscle tissue, he considered, was due to the polarized condition of the muscle itself, the inside and outside being characterized by different electromotive particles. These charges, however, could not be detected unless the muscle tissue was punctured or cut, when a current flow between the injured and uninjured portion was possible. He further showed that the current which flowed between the injured and the uninjured portion of the muscle could be diminished by stimulating muscle contraction through the nerve (the current of negative variation).

In 1868, Hermann demonstrated that a perfectly normal uninjured muscle having no injury current could give rise to a momentary current during the period of muscle contraction. This current associated with muscular activity was called the action current. He contested the view of DuBois Reymond that a current must be assumed to be present in uninjured muscles, stating that a current in resting muscle arose through the injury process and was not an inherent characteristic of normal muscle. The views of Hermann were somewhat modified by subsequent observers as data accumulated. It was noted that a constant current resembling the current of injury of muscle could be detected between the outer and inner surfaces of the skin of a frog associated with the activity of cutaneous glands. Currents were demonstrated between the hilum and the exterior of salivary glands and between the optic nerve and cornea of the excised eye—

an injury current which could be increased or decreased by the action of darkness or light upon the retina. Currents were likewise indicated in plant tissues, which led to the disuse of the term animal electricity.

The modern viewpoint on tissue electricity arose through the work of Bernstein, Macdonald, and Brünings during the first years of the present century and was subsequently modified by Beutner, Lillie, Bayliss and others. According to recent views, ions of the cell protoplasm are polarized along the cell membrane so that the cell contents are negative while the exterior is positive. When the electrodes of a galvanometer are placed in contact with the surface, there is no deflection because of the isoelectric character or equivalence in charge on the exterior of the membrane. After an injury, a current flows between the exterior and the interior of the cell, giving rise to an injury current which had been known by earlier investigators as the proper current (Matteucci) or current of rest (DuBois Reymond). When a contraction wave in muscle or wave of activity in a gland passes over the cell unit in the normal function of the cell, a change in the permeability of the cell membrane follows the wave of activity. At the location of the permeability change, an electrical current arises between the exterior and the interior of the cell, initiating an action current (Hermann). As the action current travels down a nerve or muscle fibre, it passes by one electrode and then the other of a galvanometer in such a way as to cause a deflection in one direction and then in the other. The alternation of the galvanometer reading represents a diphasic response. When the current of injury from a mutilated cell or group of cells is recorded, the passage of a wave of activity results in a decreased galvanometric reading, rather than diphasic current. This is the negative variation of DuBois Reymond and Helmholtz. The electrical polarity associated with living tissue is a consequence of the metabolism and irritability of the cell, and all active cells show this characteristic. The forces of each tissue are similar to the electrical forces of the constituent cells, and the electrical changes in polarity associated with the excitation of a tissue are capable of detection. In a practical sense, the electrical changes of living tissues have been utilized in the investigation and clinical study of the heart.

In 1856, Kölliker and Müller demonstrated electrical current in the frog's heart. Burdon-Sanderson and Page during the 70's and 80's followed up the earlier work with more complete studies on both frog and turtle hearts. Waller extended action current investigation to the isolated mammalian heart and in 1889 he devised methods for determining the electrical changes of the intact heart of both mammals and man. Garten and Einthoven among others of the nineteenth century advanced the electrophysiology of the heart to an essentially modern state. All of the successors of Kölliker and Müller recorded the action currents photographically by means of the Lippmann capillary electrometer. This instrument consisted essentially of a capillary tube containing mercury, in contact with a dilute sulphuric acid solution. As a current passed from one liquid to the other, the surface tension of the mercury meniscus changed, resulting in the mercury column advancing or receding in the capillary. A beam of light directed upon the junction of the mercury and acid could be focussed to a camera having a movable film. The movement up and down of the mercury column when photographed upon a moving film thus recorded the electrical changes of the heart. This instrument was extremely sensitive to quick changes of current, but the inertia of the mercury did not allow ideal curves.

A very sensitive galvanometer which would not lag in recording quick changes of potential was desirable, and Einthoven (1903) adopted the D'Arsonval galvanometer principle in constructing the string galvanometer. This instrument consisted of an extremely fine platinum or silver-coated quartz fibre carrying a current between two very powerful electromagnets. As the current moved up or down the delicate fibre, it was attracted toward one or the other of the magnets. The slight changes of position of the wire were magnified by a microscope, and the image was recorded on a moving photographic film. Since it was impossible to press electrodes immediately upon the intact heart, current was drawn from the two arms or from the arms and a leg. The sum of the action currents within the body was indicated in the two leads, but since the heart produced a varying current which was of short duration, the action current of the heart could easily

be distinguished from all other currents. The heart, then, could be considered as an organ, the action currents of which could be delivered to electrodes through the fluids and tissues of the body which act as electrical conductors. During the first decade of the Einthoven galvanometer, a number of physiological studies were made upon the action current of the heart, in which it was shown that the characteristic of the diphasic action current varied in different physiological and pathological conditions. The first clinical studies upon the human heart were made in Leyden where the leads of the galvanometer passed from the physiological laboratory to the hospital, nearly a mile away (1906). This instrument was first known as the "telecardiograph." The clinical side of electrocardiography has been studied to a great extent by Lewis, Kahn, Hoffmann, Pardee, Wilson and others. Cardiac disturbances in rhythm, such as bradycardia, tachycardia, extrasystole, auricular fibrillation and heart block, and also disturbances in conduction associated with hypertrophy of the heart muscle, atrioventricular bundle block and possibly changes due to the coronary circulation are the most outstanding conditions which influence the type of the electrocardiographic curves. The instrument is of secondary value in the diagnosis of valvular defects of the heart.

In recent years, new types of galvanometers have received great use in electrocardiography. These instruments, known as oscillographs, instead of requiring a very sensitive galvanometer, use a quick responding type which reacts to the feeble heart currents only after they have been amplified several thousand times through vacuum tube amplification.

MEDICAL ECONOMICS

MEDICAL HEALTH SERVICE*

H. A. LUCE, M.D.

Chairman of the House of Delegates

It is probable that the desire of those assembled here is that the reasons for the action of the special meeting of the House of Delegates at Flint be analyzed, as much as to learn what actually took place. A history of the events leading to the action, the background of the situation and certain principles relative to medical service must be considered. Unless one has pursued intensive study or has been

in actual practice during the entire period, he has not a full conception of the changes that have taken place in medical practice during the past twenty years. A vision of the future must of necessity be attempted to properly rationalize our present plans.

At the Pontiac meeting of the House of Delegates in 1932, a committee on Medical Economics was approved and its appointment authorized. The subject of health insurance was considered at two subsequent meetings of the House of Delegates. On account of conflicting reports about the operation of health insurance in England, a commission was sent to England in January, 1934. On the commission's return, each member prepared a separate report, and it will be of interest to know that the one who went to scoff, remained to pray. It was *his* report that had to be toned down and soft-pedaled rather than that of Dr. Sinai. However, an outstanding remark in the joint report of the commission, emphasized at several subsequent sessions, namely, "*In presenting this report your commission wishes to record its opposition to the introduction into the United States of any system of health insurance now existing in any country of Europe,*" is of noteworthy importance. Another point to be emphasized is that the faults of the English system are the result of the British Medical Association being unprepared with any plan at that period in British history when a plan was needed.

The medical profession in this country today is much in the same position as the early settler in the prairie areas of the West. He sees in the distant horizon the smoke and flames of an oncoming devastating conflagration. He has two chances: wait and hope the wind will change, or start a back fire and save his possessions and protect his future. Those in the medical profession who say that everything is going to be all right in a short time, that the medical organizations should not lead in the formation of plans for service, are waiting in a vain hope, not predicated on logic or history, but based on prejudice and negativism. To those who are supinely confident that soon all is coming back with the return of prosperity, my thoughts return to my early years with their colorful fairy tales in which right always triumphed, but in the cold realities of later life we often see our ideals dragged in the dust because those who should champion their cause sit idly by in anticipation of some eleventh-hour miracle.

Do not condemn your fellow practitioner for his connection with organizations operating at a profit: the compensation surgeon working for an insurance company. Do not condemn the public health doctor as an individual. Do not condemn the reserve corps of the Army and Navy. Do not condemn the veterans' bureau doctor. Do not condemn the doctors on hospital staffs doing free work or on a part pay basis. You know well enough that, should they refuse, there are scores of others willing to take the position at a moment's notice.

Rather direct your energies towards wrong systems; meet the problem in a constructive, not a destructive, way.

The costs of medical care are incurred in a haphazard, uncertain and unbudgetable way. How much longer do we expect a nation, system-minded, production at minimum cost, students, flooded with socially-minded leaders, will keep from attacking the problem of the distribution of medical care?

The gap has existed for years between those needing service and those able to furnish it. It was recognized before the depression and the depression widened it. It is fair to conclude that the gap will not be closed with a return to normalcy. The majority of the proponents of health insurance in the medical profession are men past that period

*Extracts from a speech given by Dr. Henry A. Luce before West Side Medical Club, May 3, 1934.

in life which welcomes change, but have in addition a greater sense of responsibility for human life. They feel that the full benefits of the progress that medical skill has achieved should be available to all humanity. Two factors seem to keep the

of Approval by the House of Delegates only approval of the following points was made, namely:

- a. Approval of the general principles of the plan.
- b. Approval for discussion of the plan with employers and employees.



WAYNE UNIVERSITY COLLEGE OF MEDICINE

This is an unusual picture of what was long known as the Detroit College of Medicine and Surgery. All the old buildings occupying the triangular lot across the street have been razed and the ground is in process of being made into a park. The widening of Gratiot Avenue has resulted in a clear, open space from the college steps. Immediately to the rear of the college are the laboratory buildings and a building in which is located a large auditorium and the Medical Library, which is the medical department of the Detroit Public Library. On a large wooden sign-board over the entrance of the college is the new name of the institution which shows it to be a unit of Wayne University. Each alumnus of the Detroit College of Medicine and the Detroit College of Medicine and Surgery will be given a certificate designating his relation to the newly named institution.

See page 336 for announcement of the Detroit College of Medicine Alumni Day, which is being held this year on June seventh.

patient and the doctor apart—the patient's inertia and an economic cause. The patient's inertia is illustrated by his indifference to such free treatments as are even now available—such as vaccination and immunization in general.

The old custom of collecting from the thrifty and letting the shiftless go by is open to criticism. It is unfair that the medical profession should carry the load of the services to the unfortunate when the burden should fall on the community as a whole. There should be no charity or clinic cases except such as are actually needed for teaching purposes or are personal selections by the physician himself. The public feels that the doctor is foolish for assuming such a tremendous burden as he has been accumulating.

Remember, the government has the power to take over the entire medical work of the units under its control, and by arranging to have work done by salaried government employees it can go far towards establishing state medicine on a permanent basis.

There is nothing new or revolutionary about the idea of group activity and control. Industry has long recognized it. Only we in the medical profession have desperately tried to hold on to our halos, have tried to assure ourselves that our profession is not subject to fundamental laws.

You will notice specifically that in the Resolution

- c. Approval of an action to determine the legal status of the *Mutual Health Service* and the necessary action for the organization of the *Mutual Health Service* for presentation to the House of Delegates for final action.

All of this is safeguarded by a further resolution that the plan for *Mutual Health Service* shall not be inaugurated in any county without the approval of the County Medical Society as well as the State Medical Society. This should prove to anyone that no plan has been adopted nor will receive action without due and timely notice. However, the House of Delegates felt that the continuation of the work of the Committee on Medical Economics should be encouraged and by a unanimous vote near the close of the session gave the committee an expression of confidence.

The delegates have returned to their respective county societies and have been criticized for actions that did not take place. They showed almost unanimous willingness to be guided by their constituents. The problem is now flatly in the lap of the members of the profession. No irrevocable action has been taken by the House of Delegates. You as members of the profession are to decide; you must assume the responsibility. It is a grave responsibility whether you accept or reject. It is not to be treated lightly nor to be decided without careful

and thoughtful consideration. Make your decision in a cool, analytical manner. Try to visualize the future as well as humanly possible. Study the trend of the present as well as the history of the past. Let no preconceived ideas influence you. Give no premature instructions to your representatives. Between now and the September meeting, which is in all probability the earliest the matter will be considered, much can transpire. Other plans* are in the process of development. All honor to the proponents of "back fires" to protect our traditions and render adequate service to the public.

Again I repeat, it is your problem, your responsibility. You cannot evade it. The public look to the medical profession for guidance because it is a public economic problem and who is better qualified than the medical profession to decide? History is in the making; good or bad as we determine. The politicians and commercial interests have determined the outcome of the matter in other countries to the detriment of the public as well as the medical profession. If, in your opinion, no action should be taken by the medical organization, have the courage to say so; go on record to that effect. Write a letter to the Economics Committee stating your reasons. If you are correct, posterity will crown you. If you are wrong, it's your requiem. By all means express yourself. If you are convinced that the Economics Committee are working along the right course, lend your assistance. Criticize their plan constructively. Write the committee your reasons for thinking certain parts of the plan are unworkable. When you come to write constructive things, you will find it more difficult than mere oral denunciations. The committee bravely acknowledges the experimental state of the plan and are aware of the seriousness of its principle. They will welcome facts and suggestions. It is your duty to take your share of the load.

MODERN EXTENSIONS OF BEAUMONT'S WORK

Note.—The *British Medical Journal* in its issue of April 14, 1934, contained the following review of the Beaumont Lectures given in Detroit in 1933 and printed in the March-May numbers of this JOURNAL. Since these lectures were delivered in a city in our own State and since they commemorated the one hundredth anniversary of the publication of Beaumont's work on Digestion, we reproduce the review by the *British Medical Journal*.

"The year that has just passed was the centenary of the publication by Dr. William Beaumont of his classical book, *Experiments and Observations on the Gastric Juice and the Physiology of Digestion*. This described his investigation on his patient with gastric fistula—Alexis St. Martin. Beaumont's studies became known throughout the world, and his methods were applied by Claude Bernard to lower animals and later by Pavlov to dogs. Of succeeding physiologists none in America has advanced our knowledge of the subject so much as Professor W. B. Cannon of Harvard, and in a small work compact with information he has brought up to date the modern extensions of Beaumont's studies. The lectures formed a course in the Beaumont Foundation Lectures, and commemorate the hundredth anniversary of the publication of Beaumont's classical work.

"Beaumont's book is essentially practical and descriptive of his actual experiments, but at times he was tempted to express certain theoretical opinions regarding the nature of processes which he could not fully determine by observational methods.

*The speaker here referred to the plan being inaugurated in Wayne County with which he is in entire accord.

Among the opinions were those included in a brief chapter entitled, 'Of Hunger and Thirst.' In regard to both of these sensations Beaumont took a view which was contrary to the accepted physiological teaching of his day, and, though his own explanations were incomplete, he did approach nearer to the truth than the authorities. Beaumont declared that thirst is a sensation arising from the mouth and fauces, a feeling of dryness due to evaporation of moisture from the surfaces of those regions because the passage of the respired air took up the moisture at a rate faster than it could be supplied. He suggested that the failure of a secretion adequate for keeping the surfaces of the pharynx moist was due to a viscid state of the blood resulting from an inadequate water supply. That thirst has a local source in the mouth and pharynx is shown by the relief obtained from painting the back of the mouth with cocaine; sipping a small amount of water will temporarily relieve, or holding in the mouth a substance which causes a secretion of saliva, like lemon, will lessen, thirst. In thirst the salivary glands, whose secretion is about 98 per cent water, are unfavourably affected by the deficient general water supply. Such a deficiency may occur in people deprived of water, or temporarily when large amounts of fluid are secreted into the alimentary canal in the form of gastric and pancreatic juice during digestion. Naturally, in our ordinary eating habits we take water with food as we eat. This water is soon absorbed after its passage through the stomach, and serves to compensate for the loss of water from the body in the digestive secretions which are poured out as digestion continues after the meal is over. Instead of there being an increased viscosity of the blood as Beaumont suggested, there is a reduced blood volume and an attendant reduction of the flow of saliva. Beaumont's view of hunger was that it was 'produced by a distension of the gastric vessels, or that apparatus, whether vascular or glandular, which secretes the gastric juice.' He reasoned that the sensation must have its source in the stomach itself and that it was an expression of local congestion of the mucous membrane, and he cited the fact that application of food to the internal coat of the stomach results in an immediate throwing out of a quantity of fluid which mixes with the food. Careful observation, however, reveals that hunger is intermittent or recurrent in character, and Professor Cannon demonstrated in 1910 that hunger pangs were due to cramplike tightening of the smooth muscle of the gastric wall. These may occur in the absence of nervous government from the spinal cord and brain, but they are influenced reflexly through the vagi, and may be abolished in strong emotional states. Alcohol and tobacco cause cessation of the hunger contractions, as do vigorous muscular exercise and the old habit of tightening one's belt, at least for a time.

"Beaumont noted that in his patient Alexis St. Martin symptoms of general indisposition were associated with considerable disturbance of the processes of the stomach: 'no gastric juice can be extracted, not even on the application of alimentary stimulus . . . food taken in this condition of the stomach remains undigested for twenty-four or forty-eight hours, or more, increasing the derangement of the whole alimentary canal, and aggravating the general symptoms of the disease.' Not only debilitating disease but also exhausting labour is associated with failure of proper action of the digestive organs. Pavlov's experiments demonstrated the effect of the nervous system on the digestive secretions; not only was there a direct vagal secretory effect on the stomach and pancreas, but a psychic secretion took place when the higher centres of the brain were stimulated by sight or smell of food, and these higher centres then stimulated the vagal

nuclei. Cannon showed that attendant on the psychic secretion from the digestive glands there is a psychic increase of muscular tone, both being consequences of vagal excitation. On the vagal and the sacral visceral nerves depend, therefore, important relations of digestion and health. But the digestive process may also be profoundly disturbed through the positive action of the sympathetic division of the autonomic system, a division which is commonly opposed in action to the cranial division and which has, consequently, an inhibitory effect on muscular tone and on the secretions of the digestive glands. Beaumont reported the influence of extreme anger upon gastric digestion as observed in Alexis St. Martin. Not only emotion but also pain can affect the digestive process.

"Professor Cannon's own work has shown that the inhibition of the digestive process is but a single item in a variegated picture produced by stimulation of the sympathetic nervous system. In addition to the well-known acceleration of the heart and rise of blood pressure, there is a complex of other changes, including redistribution of blood in the body, discharge of extra corpuscles from the spleen, more rapid coagulation of the blood, increase of blood sugar, and dilatation of the bronchioles. All these may be brought about by conditions which excite the sympathetic system; prominent among such conditions are external cold, hypoglycemia, motion, and emotion. The sympathicoadrenal system is thus a protective agency in times of crisis; but much more an effective factor in maintaining constancy of the internal environment, rendering the higher mammals independent of external changes of temperature and likewise independent of possible disturbances which might be caused by our own actions. This fitness for flight or fight is of great value to the organism. The repercussion of the emotions on digestion suggests some practical advice. Since the total complex of bodily changes associated with emotional excitement is properly interpreted as preparation for struggle, we should try to take a rational attitude towards any exciting incident which may occur. We should decide that if there is action to be engaged in, the excitement should be allowed to run its full course without limitation. If there is nothing to be done in the circumstances, however, it is unwise to permit the organism to be deeply disturbed, and especially the fundamentally important functions of digestion to be inhibited. When an occasion arises which provokes a degree of excitement that cannot be controlled the reasonable behaviour is that of working off in hard physical labour the bodily changes which have occurred in preparation for vigorous effort. We should dig till we gently perspire. Often the excited state can thus be reduced and the body, instead of being upset, is restored to normal."

INJURIES OF THE EYE

(*The Rainbow*)

The earhandicapped who read lips are dependent on their eyes. They should keep their eyes in the best possible condition. Dr. H. H. Seabrook of New York is reported to have said, in part: "Our country leads the world, apparently, in the brilliancy of its artificial illumination and certainly leads the world in ocular exhaustion, discomfort and congestion. When gas came into general use these troubles began to increase, and a further increase was in evidence as the incandescent electric lamp came more and more into fashion. Both here and abroad oculists agree that the kerosene burner is the least harmful artificial illuminant. The incandescent lamp has given rise to more chronic eye degenera-

tion and disturbance than any other light used for near work."

All of the doctors said that by a little care the incandescent bulb can be made almost as harmless as the kerosene lamp. They advised the use of illumination by reflection student lamps and ground-glass bulbs.

Many years ago we had noticed the disagreeable effect of the incandescent bulb. Everyone has experienced the after-images after looking at a strong electric light. At that time we used a very simple device in order to make the illumination less disagreeable by placing the opaque disc under the light instead of above the light. The light was reflected from the ceiling and proved to be very agreeable to the eye. It was, as far as we know, the first design for indirect illumination, at least in Detroit, although such a simple device may have been used by many others in many localities. It was, however, if we remember correctly, of sufficient interest to be mentioned in the *Detroit Times* in a little item. The warning concerning a too bright illumination should be heeded. Automobile drivers must be impressed by the effect of headlights which are too bright. An illumination which exceeds the physiological demands cannot help but be injurious to a more or less great degree. We know of snow blindness even if it is usually only temporary. The eye is a precarious organ which demands protection from unnecessary injuries.

PRIZE ESSAY—THE DOCTOR

The painting entitled "The Doctor," by Luke Fildes, has been long familiar not only to the medical profession, but to the laity as well. The original, which was painted in 1891, is to be found in the Tate Art Gallery, London. Fildes was born in 1844 and died in 1927. The painting in question is presumed to represent the home of a "crofter" in the Highlands of Scotland. The doctor employed by Queen Victoria is credited with the ministrations to the sick child. A sculptured reproduction was on exhibition a few weeks ago in Detroit and a prize was offered to the person giving the best description of the sculptured picture. The prize was awarded to Mr. U. R. Bailey of Detroit, the father of Dr. Louis J. Bailey, one of the younger members of the Wayne County and Michigan State Medical Societies. The following is Mr. Bailey's interesting description of the picture:

"Standing before the reproduction of *The Doctor*, I was filled with awe and admiration for the ability of the artists who could portray such a touching scene and bring to the mind of the observer the great need and necessity for the family physician in the home. It never occurred to me that there was any incongruity in this sordid setting, although the poverty and squalor would seem to indicate that this doctor was out of place in this sort of home. However, he seemed to be part of the scene, as indeed that is exactly the role played by the family physician; he knows no class, no color, sect or creed. His is a mission of mercy; he ministers unto not only the ills of the body, but he renders surcease to the sick soul. His knowledge of medicine, psychology, and human nature fits him to act as doctor, advisor, counsellor, and friend. Who has not felt that sense of security the moment the doctor enters the sick chamber. He seems to dispense that invisible, intangible, subtle something that at once makes us feel better in mind as well as in body. Many a man has gone forth from beside a sick bed, his spirit brightened, his morale strengthened by the kindly words and human touch of the family physician, who knows just how to prescribe

for those heartaches that come when sickness and disease attack our loved ones.

"We need The Doctor in our homes now more than ever. We need his wisdom, his counsel, his friendship and sympathy. We need him as the Galileans needed the Great Physician, who taught His wonderful precepts of health and manhood.

"The look of perfect confidence upon the father's face in the picture, and his attitude of complete submission to the will of the doctor, indicates that he is satisfied that all within human power will be done to restore health to his loved one whom he adores. This confidence is typical of the medical profession. Such faith has been born by centuries of honest, faithful service on the part of the family physician.

"The look of deep interest upon the doctor's face indicates that he feels the same pangs of pain, the same sense of suffering and sorrow felt by the parents, and that same look assures us that he will use all his great surgical skill and medical knowledge to restore to health the little child who is passing through the shadows.

"The doctor's mission is one of mercy and compassion, and his profession 'seems like God's' because it is a mission of untiring, unselfish service."

STREAMLINES GONE DAFFY

Ah just cam frae Shanty Toon, wi streamlines
on ma car,
It's fu' o' streamlined gasoline that oucht tae tak'
me far
Aboot th' streamlined countryside, where green's th'
meadow patch,
An' A've a streamlined o'ercoat, wi' colors a' tae
match.

Ah hae a freen' wha's aw'fu' sick wi' streamlined
pains acute,
That rins frae tae tae gowden hair that's stream-
lined roon aboot,
An' A've a freen' wha's apt tae tell a streamlined
story auld
That wull bring th' smiles that's streamlined a' doon
frae where yer bauld.

An' there's that chap wha whittled oot a stream-
lined wooden gun,
An' foon' a streamlined passageway richt oot intil
th' sun,
An' there wis placed richt i' his way a gatlin' gun
tae take
That is fu' o' streamlined bullets tae help him mak'
th' break.

Th' Doctor used tae gi' us pills th' color o' guid
wine,
An' cured oor guid auld streamlined chills wi' cap-
sules o' quinine
That was mixed wi' streamlined calomel that griped
a streamlined grip,
An' sometimes he gi'ed a sample frae th' bottle on
his hip.

Noo, th' lassies a' are dressin' wi' streamlines o'er
their hips,
An' using oop oor ink that's red tae streamline
roon' their lips,
Th' artists too are drawin' stuff wi' streamlines
roon aboot,
Bit wha is there on earth tae tell just what it's
a' aboot?

WEELUM.

SOCIETY ACTIVITY

THE DOCTOR CONTINUES TO LOOK AT PUBLIC HEALTH

Your Committee continues to advocate a procedure whereby the family physician will actively participate in the community health program by providing preventive medical services for his clients. Such a program is by no means a substitute for the properly organized full-time local health service with a well-trained health officer and a qualified personnel of public health nurses and health educators. Such units can in most instances be economically established on a county-wide basis except where the population is so sparse that several counties may be combined into a health district. Such a health department should work hand in hand with the qualified and prepared physician whose influence in the field of health education may be materially expanded.

In our report published in the April issue of this JOURNAL it was stated that a schedule had been mapped out for the spring months with the expectation of carrying the program of professional participation into every part of the state. During the past two months the holding of a number of conferences has been made possible through the courtesy of the W. K. Kellogg Foundation of Battle Creek.

On April 19 an all-day session was held in Bay City at the request of Dr. Louis F. Foster, a member of this Committee and Secretary of the local Medical Society. Dr. J. H. McEwan, President of the Bay County Medical Society, presided at the various sessions and there were approximately sixty physicians in attendance.

In the morning a Clinico-Pathological Conference was held in the Auditorium of the Elizabeth McDowell Bialy Memorial of the Mercy Hospital. The clinical discussion, which was devoted to the control of communicable diseases, was opened by Dr. D. J. Mosier of Bay City. Other members of the Bay County Medical Society took a very active part in the discussion which followed. The clinical figures were summarized by Dr. John E. Gordon of Detroit, who emphasized the important diagnostic points of scarlet fever and conditions with which it might be

confused. The case which was reported at the Conference was taken from the files of the Herman Kiefer Hospital by Dr. J. A. Kasper, Pathologist at that institution, who conducted the Conference.

At the afternoon session Dr. Gordon spoke on the control of scarlet fever and discussed his recently conceived plan for shortening the quarantine period of scarlet fever cases and reported the results thus far obtained.

Later in the afternoon the meeting was adjourned to the Wenonah Hotel, where a symposium on the diagnosis, treatment and control of tuberculosis was presented. Dr. Wm. A. Evans of Detroit spoke on the importance of the x-ray in the diagnosis and follow-up treatment of tuberculous lesions in the lungs. This discussion was illustrated by comprehensive exhibits of chest films which Dr. Evans used to emphasize the influence of x-ray examination. He illustrated the successful results which may be obtained by the various forms of collapse therapy. Another exhibit showed the pathological lesions together with the roentgenological films. Dr. Bruce Douglas of Detroit, President of the Michigan Tuberculosis Association, summarized a survey recently conducted among high school students in and near Bay City. He placed particular emphasis upon the need for early diagnosis and his discussion was supported by films showing the healed childhood type of tuberculosis as well as active cases of the adult pulmonary type.

At the dinner hour there were present as guests of the Bay County Medical Society all the members of the Board of Supervisors. Dr. L. O. Geib, Chairman of the Committee on Preventive Medicine of the State Medical Society, outlined the plan for medical participation which was adopted by the Society at its last annual session held in Grand Rapids. This was followed by a brief talk by Dr. Douglas, in which he emphasized the economies to the county which might accrue by a program for the early discovery of tuberculosis through the employment of a case finding program involving the use of the tuberculin test followed by a roentgenological study of active reactors. Dr. Henry F. Vaughan of Detroit then spoke on medical economies and their relationship to the public health and described in detail the program as it has been applied in Detroit

by the Wayne County Medical Society, in rural sections of Michigan by the W. K. Kellogg Foundation and in communities in other parts of the country to which the work has been extended. He stressed the need for the control of communicable diseases through the active coöperation of practicing physicians working with the local health department, the latter acting in an administrative and educational capacity. This session in Bay City marked the first of a series to be held in various parts of the state.

During the second week of May, again with the coöperation of the W. W. Kellogg Foundation and its staff, a series of meetings were participated in by Doctors Geib, Gordon and Vaughan of Detroit and Dr. G. M. Byington of Battle Creek. The first conference, which was held in Owosso on May 7, was arranged by Dr. W. E. Ward, Secretary of the Shiawassee County Medical Society. The members of the Livingston County Medical Society were invited as guests. The control of communicable diseases was again the subject of Dr. Gordon's discourse and the other three speakers devoted their time to the discussion of the program of medical participation which has been outlined in the recent issues of this JOURNAL.

On Tuesday, May 8, this same group moved on to Traverse City, where at noon Dr. Vaughan spoke to the Rotary Club and in the evening all participated in a joint meeting of the Grand Traverse-Leelanau County Medical Society, this meeting having been arranged by Dr. E. F. Sladek of Traverse City. The following day the program was repeated at the meeting of the Luce County Medical Society held at the Newberry State Hospital. This meeting was arranged by Dr. Geo. F. Swanson, Secretary of the local society, who had invited as their guests the physicians living in the eastern section of the Upper Peninsula.

On Thursday, May 10, the group moved on westward to Ironwood and the conference that evening was held at the St. James Hotel in Ironwood, the meeting having been arranged by Dr. F. L. Reynolds, Secretary of the Gogebic County Medical Society. On Friday the closing conference of the group was held in Menominee jointly with the physicians from Marinette, Wisconsin, and representatives from the neighboring areas. This meeting was arranged by Dr. Wm. S.

Jones, Secretary of the Menominee County Medical Society, and Dr. T. J. Redelings, representing the physicians of Marinette.

Word has also been received that the participating program, with certain modifications, is being applied in a great number of communities not only in the United States but abroad. The Medical Officer of Health of the Borough of Kensington, London, England, reports that the program is being put into effect April 1, 1934, with respect to diphtheria prevention. This is an innovation in England. The general medical practitioners who are coöperating are being paid at the rate of ten shillings per diphtheria immunization. The health authorities are carrying on an intensive educational campaign. Five pages of the London Annual Report for 1933 are devoted to this program.

In Albany, N. Y., the Medical Society has undertaken a tuberculosis case finding program under coöperative arrangements so that all tuberculin tests and general physical examinations will be given by coöperating physicians in their own offices. For the present the work is restricted to the entering children in the senior high schools. The city has appropriated \$4,000 with which to pay the physicians.

In Charleston, W. Va., eighty-eight of the 110 local physicians have coöperated in a diphtheria prevention program. Beginning their work in November, the results have been so promising that 50 per cent of the school children and also 50 per cent of the preschool children have been protected. There were no local funds with which to compensate the physicians for services to indigents, but more than 50 per cent of the parents paid the coöperating doctor \$1.00 per treatment.

In St. Louis, Mo., some 800 members of the County Medical Society are coöperating with the Health Officer in a diphtheria prevention program.

ECONOMICS

The JOURNAL is a medium in which members may present their views and opinions. The Committee on Economics is desirous of securing the opinion of members in regard to the proposed plan for mutual health services. Have you read the plan? Are you familiar with the proposals that are being

advanced by lay groups, social workers, governmental officials and hospital groups? What is your opinion, advice and recommendation? Have you another solution?

We commend the attitude reflected in the *Oakland County Society Bulletin*, and reprint the following expressions in order to encourage others to record their views:

MUTUAL HEALTH SERVICE, FARNHAM'S OPINION

The past year in this country has been pre-eminently the "New Deal" year. Most of the measures have been frankly experimental, some of them are now considered quite frankly failures. Yet progress has certainly been made.

The report of the Medical Economics Committee to the House of Delegates of the Michigan State Medical Society on April 12th at Flint presents a "New Deal" in Health Service to Michigan.

The Mutual Health Service plan as presented by this committee certainly is a thoughtful, constructive and courageous effort to answer our critics in a constructive way and better the health situation in this state. As a laboratory experiment in Medical Economics it appeals to me very strongly and the manner in which it was received by the House of Delegates is very encouraging to some of us who have felt for a long time that something of this sort must and should come but feared that it might come in a much less constructive way with a minimum of benefit to the public and a maximum of danger and detriment to the Medical Profession.

The work of this committee cannot be too strongly commended and I say more power to them and to the rapid working out of their plan.

L. A. FARNHAM.

BURKE, "ON MUTUAL HEALTH SERVICE"

Realizing the trend toward health insurance, by insurance companies, by industry and by government, and sensing that control of such a movement would be removed from the professions unless we take the initiative, our State Medical Society has seized upon an auspicious moment to promulgate a plan which seems worthy of trial. First and foremost it provides adequate medical service with free choice of physicians and avoids the pitfalls of cash benefits. It embraces only those individuals who have been unable to buy and pay for adequate medical attention. An estimate of the returns from this group under the proposed plan indicates a substantial increase in revenue to the physician. The cost is to be borne by the individual and/or the employer following the growing social trend which makes industry partially responsible for the health of its employees. Lastly the plan avoids control of the profession by the insurance groups, hospitals or government. The side effect of stimulating post-graduate study may prove to be one of its most valuable assets. These desirable features merit serious consideration and I feel that the least we can do is to withhold adverse criticism until a fair trial has been allowed.

C. G. BURKE.

OTTO BECK'S REACTION TO MUTUAL HEALTH SERVICE

My reaction to the proposal of the House of Delegates for a Mutual Health Service is one of indecision. There is no doubt that the families of low income would benefit providing they could be induced to take advantage of the service. For the plan to

be successful the service must be compulsory and require all employers to contract the services for their employees. This would require legislation by our state government.

The service would benefit physicians in large industrial areas but it is my opinion that those physicians practicing in residential and agricultural districts would have such a small number of insured patients that they would not be benefited.

I am anxious to see the plan given a fair trial. At least it is a splendid gesture of the Michigan State Medical Profession to Society.

O. O. BECK.

A SUMMARY AND COMPARISON OF MATERNAL AND INFANT MORTALITY RATES IN THE CITY OF HOLLAND COVERING A TEN-YEAR PERIOD

WM. WESTRATE, M.D., HEALTH OFFICER

Holland, Michigan

An article under the heading, "Every Baby Needs a Mother," appearing in the February issue, 1934, of *Good Housekeeping* raised certain doubts in my mind, so that I immediately set out to verify or disprove certain statistics there set forth as relating to our own city of Holland.

Here are a few of the statements as set forth:

"In the thirteen years since *Good Housekeeping* first advocated the passage of the Sheppard-Towner Bill giving aid to prenatal cases, over 200,000 babies were left motherless in the United States. Thousands of maternal deaths are preventable and lack of prenatal care was considered an important factor in this death rate. Another and most important factor was known to be the attitude—one might truly say the carelessness or the incompetence—of the attending physicians, but this was a stone wall as long as the medical fraternity refused to admit its culpability. Now it has made such an admission, assuming the responsibility for 61.1 per cent of the preventable deaths in New York City for the three-year period 1930-32, a measure of responsibility that by no means applies to New York City alone. New York has the highest maternal mortality rate of the large cities of the world. It had 2,341 deaths, and from exhaustive studies it was thought that 1,343 were preventable. Sixty-one and one-hundredth per cent of these preventable deaths were due to the incompetence or carelessness of the physicians and 36 and a fraction per cent was due to the negligence of the mother, with the hospitals in some directions sharing the brunt.

"To be exact, they divided the casualties into four groups, A, B, C, D. In A, which represents the slum population, where extreme poverty begets overcrowding, uncleanness, and widespread ignorance, and where free medical care is available, there were 275 deaths, of which 193 could have been prevented. Of these the physician was blamed in 115 cases, the patient in sixty-seven, and the midwife in eleven. In B, which stands for the better-paid workers, whose living standards are somewhat higher, but who must rely on municipal and voluntary hospitals for free medical care, there were 653 deaths, 407 of which were preventable. The fault here was upon the physicians in 278 cases, upon the patient in 114, and upon the midwife in fifteen. Under C were listed the white-collar class, in which living conditions and general education are much higher in the scale. They are able as a rule to pay for their medical needs and usually compose the clientele of the general practitioner and less highly-trained specialists. In this group there were 572 deaths, 345 of which were preventable. In 245 cases the physicians were held responsible, in eighty-eight the patient, and in three the midwife. In D, which lists the more fortunately situated who can afford highly-trained specialists and the best hospitals, there were only twenty deaths, ten of which were deemed avoidable. Nine of these were attributed to the physicians and one to the patient. A significant supplement was another table revealing that, with the exception of D, the highest number of fatalities occurred in municipal and voluntary hospitals, while the lowest was in obstetrical hospitals or among women whose babies were born at home."

The above paragraphs are quoted almost verbatim.

It is not my desire to dispute figures and statistics

as set forth by *Good Housekeeping*, but I would like to insert here the statement that someone has made, that "statistics can be awful liars." It is my desire to show that the city of Holland has a medical profession that gives its mothers intelligent, skillful and painstaking care as evidenced by the facts and figures taken from our records, covering the years 1924 to and including 1933. I also wish to show that the Holland Hospital is an institution that ranks very high in its medical care of mothers and babies.

Here are the figures—which figures may be verified by the records of the city of Holland and the Department of Health at Lansing.

	BIRTHS	MATERNAL DEATHS	INFANT DEATHS UNDER AGE 1 YEAR
1924	349	0	26
1925	341	1	35
1926	295	0	31
1927	319	1	19
1928	351	2	22
1929	352	0	26
1930	342	1	18
1931	338	0	29
1932	256	1	22
1933	238	0	26
	3,181	6	254

	INFANT DEATHS	DEATH RATE STILLBIRTHS	OTHER CAUSES
1924	26	6	20
1925	35	18	17
1926	31	15	16
1927	19	11	8
1928	22	15	7
1929	26	16	10
1930	18	6	12
1931	29	14	15
1932	22	5	17
1933	26	11	15

HOLLAND HOSPITAL

Total number of births from June, 1924, to Feb. 13, 1934	1,195
Total number of infant deaths	74
a. Stillbirths	28
b. Prematures	30
c. Babies died after birth	16
Total number of maternal deaths	5

It will be noticed that five of our maternal deaths occurred in the hospital. Two of these were cases from the country surrounding Holland and do not belong to the city of Holland proper. One of these was a pneumonia case and, in all fairness, death could be ascribed to that disease rather than to childbirth. Everybody with any intelligence knows that the serious cases are brought to the hospital so as to receive expert care. Naturally we expect a higher mortality in such type of cases. How absurd to blame our hospital for five of our six deaths when the nature of the case is such that death ensues in spite of the best care that a well equipped hospital can provide. If one takes statistics on their face value, one could argue that it is safer to have babies at home, but who can be so illogical as to leave the most important factor out of his deductions. Of our six maternal deaths, four were due to placenta previa with hemorrhage, one was due to pneumonia and embolism, and one to embolism alone. Scrutinize this carefully and compare this with the New York classification. Could any of these deaths have been prevented? Such cases can be saved when our physicians acquire divine attributes.

During the ten-year period under discussion, we have listed 254 deaths of infants under one year of age. Of these, 117 were stillbirths and the remainder died of the following causes:

CAUSES OF INFANT DEATHS UNDER 1 YEAR OF AGE

1. Premature	38
2. Inanition	14

3. Enteritis	10
4. Convulsions	8
5. Cerebral Hemorrhage	6
6. Bronchitis	5
7. Congenital Debility	5
8. Suffocation	4
9. Congenital Heart Lesion	3
10. Atelectasis	3
11. Respiratory Disturbance	3
12. Pneumonia	2
13. Cerebral Meningitis	2
14. Peritonitis	2
15. Intussusception	2
16. Congenital Malformation	2
17. Hydrocephalus	2
18. Pleuro-Pneumonia	2
19. Hemolytic Jaundice	2
20. Icterus	1
21. Intestinal Hemorrhage	1
22. Bacteremia	1
23. Hereditary Lues	1
24. Tubercular Meningitis	1
25. Acute Nephritis	1
26. Cesarean Operation	1
27. Acute Pulmonary Edema	1
28. Anemia and Streptococcic Throat	1
29. Influenza	1
30. Toxemia	1
31. Congenital Stenosis of Stomach	1
32. Cyanosis	1
33. Injury at Birth	1
34. Accidental Suffocation	1
35. Persistent Thymus	1
36. Suffocation due to Mucus	1
37. Hemophilia	1
38. Eclampsia	1
39. Infection of Lymph Gland	1
40. Prolonged Labor	1
41. Diabetes	1

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One hundred and thirty-seven babies died of the above causes during the years 1924 to and inclusive of 1933. The total number of births was 3,181. Bringing this down to mortality rates per 1,000 for the city of Holland, we have the following:

INFANT MORTALITY RATES FOR CITY OF HOLLAND FOR

PAST TEN YEARS

1924	58.1
1925	53.0
1926	66.7
1927	25.9
1928	20.9
1929	41.2
1930	41.8
1931	52.1
1932	67.7
1933	64.2

Compare these with the statistics for the State of Michigan as a whole and we have something brought to our attention that is rather startling in its significance.

INFANT MORTALITY RATE COMPARISON

	MICHIGAN	HOLLAND
1924	72.2	58.1
1925	75.8	53.0
1926	77.6	66.7
1927	67.7	25.9
1928	69.8	20.9
1929	66.9	41.2
1930	62.8	41.8
1931	57.3	52.1
1932	54.3	67.7
1933	50.8	64.2

It will be noticed that in 1928 we had a mortality rate of 20.9 which has climbed up to 64.2 for 1933. The mortality rate for the State of Michigan for 1933 was 50.8. What has happened in Holland? It is not quite evident, but my first thought would be lessened prenatal care. At this point it may be interesting to know that statistics gathered by the Metropolitan Life Insurance Company showed that there has been a marked decrease throughout the United States in the mortality rate of children from the age of one month to twelve months, but that only slight gain has been made in the mortality rate of infants of one month or less of age.

To summarize then, Holland has cause to be proud of its maternal death rate—only six out of 3,181 births over a period of ten years. The infant mortality rate is very good up to the year 1928, from which point it has been steadily climbing for no apparent reason. This needs careful thought on the part of our Board of Health and the medical profession. One would also like to call attention to our falling birth rate, which will probably be rectified by better economic conditions. Finally, the Holland Hospital gives the best of care to its obstetrical cases and only the most unreasonable of critics would blame it for deaths resulting from the most serious complications of childbirth that confront the physicians.

POST GRADUATE WORK

The following enrolled for the post graduate course in ophthalmology and otolaryngology given in Ann Arbor April 23, 28, 1934, under the auspices of the Department of Post Graduate Medicine and the State Society:

OPHTHALMOLOGY AND OTOLARYNGOLOGY

- Dr. Gordon H. Bahlman, 400 Sherman Bldg., Flint, Mich.—Ophthalmology.
 Dr. Clarence Baker, 22128 Grand River, Detroit, Mich.—Ophthalmology and Otolaryngology.
 Dr. C. S. Ballard, 14320 E. Jefferson Ave., Detroit, Mich.—Ophthalmology and Otolaryngology.
 Dr. Arthur D. Beam, Receiving Hospital, Detroit, Mich.—Ophthalmology and Otolaryngology.
 Dr. Walter J. Bien, Coldwater, Mich.—Otolaryngology.
 Dr. George M. Blackburn, 214 Fountain St., Grand Rapids, Mich.—Otolaryngology.
 Dr. Earl Bloomer, 1009 S. Mason St., Dearborn, Mich.—Ophthalmology.
 Dr. F. J. Cady, 126 S. Jefferson Ave., Saginaw, Mich.—Ophthalmology.
 Dr. L. F. Carter, David Whitney Bldg., Detroit, Mich.—Ophthalmology and Otolaryngology.
 Dr. J. V. Cassidy, Associates Bldg., South Bend, Ind.—Ophthalmology and Otolaryngology.
 Dr. Wm. S. Conway, 314½ Howard St., Petoskey, Mich.—Ophthalmology.
 Dr. A. J. Cortopassi, Second Natl. Bank Bldg., Saginaw, Mich.—Otolaryngology.
 Dr. Robert H. Criswell, 707 Washington Ave., Bay City, Mich.—Ophthalmology and Otolaryngology.
 Dr. Paul C. Cusick, W. J. Seymour Hospital, Eloise, Mich.—Ophthalmology and Otolaryngology.
 Dr. Alfred Dean, 308 Medical Arts Bldg., Grand Rapids, Mich.—Ophthalmology and Otolaryngology.
 Dr. G. F. Denyes, 316 Michigan St., Toledo, Ohio—Ophthalmology and Otolaryngology.
 Dr. Ralph G. Ferris, Birmingham, Mich.—Otolaryngology.
 Dr. P. T. Grant, 420 Medical Arts Bldg., Grand Rapids, Mich.—Ophthalmology.
 Dr. L. O. Grant, 420 Medical Arts Bldg., Grand Rapids, Mich.—Otolaryngology.
 Dr. George C. Hardie, 290 Michigan Ave. W., Jackson, Mich.—Ophthalmology and Otolaryngology.
 Dr. G. O. Hedlund, 28 Johnson Bldg., Painesville, Ohio—Ophthalmology and Otolaryngology.
 Dr. Dewey R. Heetderks, 400 Medical Arts Bldg., Grand Rapids, Mich.—Otolaryngology.
 Dr. D. P. Hornbogen, Savings Bank Bldg., Marquette, Mich.—Ophthalmology and Otolaryngology.
 Dr. Don M. Howell, Alma, Mich.—Ophthalmology.
 Dr. W. S. Jones, Menominee, Mich.—Ophthalmology and Otolaryngology.
 Dr. Thos. F. Keating, 5057 Woodward Ave., Detroit, Mich.—Ophthalmology and Otolaryngology.
 Dr. Mana Kessler, Shearer Office Bldg., Saginaw, Mich.—Ophthalmology and Otolaryngology.
 Dr. George C. Kreutz, Henry Ford Hospital, Detroit, Mich.—Otolaryngology.
 Dr. Hugh A. Kuhn, First Trust Bldg., Hammond, Ind.—Ophthalmology and Otolaryngology.
 Dr. V. R. Lapp, 250 Main St., Hamilton, Ont.—Otolaryngology.
 Dr. B. E. Leatherman, 303 The Colton, Toledo, Ohio—Ophthalmology.
 Dr. Louis S. Leo, Masonic Bldg., Houghton, Mich.—Ophthalmology and Otolaryngology.
 Dr. Lee A. Lewis, Manistee, Mich.—Ophthalmology and Otolaryngology.
 Dr. P. R. Lieberthal, 104 S. Suffolk St., Ironwood, Mich.—Ophthalmology and Otolaryngology.
 Dr. John A. Lukens, 316 Michigan St., Toledo, Ohio—Ophthalmology and Otolaryngology.
 Dr. Fred W. McAfee, 5050 Joy Road, Detroit, Mich.—Ophthalmology and Otolaryngology.

Dr. J. J. McDermott, 182 Niles Ave., St. Joseph, Mich.—Otolaryngology.
 Dr. A. R. McKinney, Second Natl. Bank Bldg., Saginaw, Mich.—Ophthalmology.
 Dr. A. M. Moll, 961 Lakeside Drive, Grand Rapids, Mich.—Otolaryngology.
 Dr. Leonard Nippe, 316 Michigan St., Toledo, Ohio—Ophthalmology and Otolaryngology.
 Dr. James T. O'Hara, General Motors Bldg., Detroit, Mich.—Otolaryngology.
 Dr. Ralph H. Pino, David Whitney Bldg., Detroit, Mich.—Ophthalmology.
 Dr. Paul Rabinowitz, Mountain Sanatorium, Hamilton, Ont.—Otolaryngology.
 Dr. Aaron D. Riker, 1012 Riker Bldg., Pontiac, Mich.—Ophthalmology.
 Dr. C. E. Savery, 105 E. Jefferson Blvd., South Bend, Ind.—Ophthalmology and Otolaryngology.
 Dr. R. N. Sherman, 720 Washington Ave., Bay City, Mich.—Ophthalmology and Otolaryngology.
 Dr. E. E. Sink, 725 N. University, Ann Arbor, Mich.—Ophthalmology.
 Dr. Walter K. Slack, 308 Eddy Bldg., Saginaw, Mich.—Otolaryngology.
 Dr. William G. Symon, Garrett, Ind.—Ophthalmology and Otolaryngology.
 Dr. Thomas L. Tolan, 324 E. Wisconsin Ave., Milwaukee, Wis.—Otolaryngology.
 Dr. Stanley H. Vegors, 313 Ashmun St., Sault Ste. Marie, Mich.—Ophthalmology and Otolaryngology.
 Dr. H. O. Westervelt, 239 Pipestone St., Benton Harbor, Mich.—Ophthalmology and Otolaryngology.
 Dr. H. T. White, 430 S. Saginaw St., Flint, Mich.—Ophthalmology.
 Dr. Elmer L. Whitney, 18224 Wildemere, Detroit, Mich.—Ophthalmology.
 Dr. Arthur P. Wilkinson, 664 Fisher Bldg., Detroit, Mich.—Ophthalmology and Otolaryngology.
 Dr. B. Palmer Woodson, Temple, Texas—Ophthalmology and Otolaryngology.

COUNTY SOCIETIES

EATON COUNTY

The regular monthly meeting of the Society was held Thursday, April 26, at the Carnes-Tavern Hotel, Charlotte. Following a dinner, the meeting was called to order by the president, Dr. Clyde McLaughlin. Dr. A. G. Sheets, delegate, gave a report of the delegates' meeting in Flint and summarized the plan discussed by them. It was moved by Dr. James Bradley and carried unanimously that the report be accepted.

The president asked a rising vote of sympathy for the members of the society now having medico-legal cases.

A very instructive paper with lantern slides, "Cutaneous Manifestations of Syphilis," was given by Dr. Arthur R. Woodburn of Grand Rapids. Following an interesting discussion the meeting was adjourned.

The regular April meeting was held on the 26th at the Carnes Tavern Hotel, Charlotte, where dinner was served to fifteen members of the Society.

President McLaughlin presided and introduced the guest of the evening, Dr. A. R. Woodburne. Dr. Woodburne's address was on "The Cutaneous Manifestations of Syphilis" and was very instructive. An interesting discussion followed. The meeting was adjourned.

A special meeting of the Eaton County Medical Society was called for May 14. Dinner was served to twenty-one members and sixteen guests from five nearby counties.

President McLaughlin presided at a brief business meeting. The members and guests were reminded of the Post-Graduate opportunities as outlined in the May issue of the State JOURNAL and urged by the secretary to read the Mutual Health Service plan as outlined at Flint.

The president then introduced the speaker of the

evening, Dr. Andrew B. Rivers of the Mayo Clinic, Rochester, Minnesota, who has been a guest for a few days of Dr. K. A. Anderson of Charlotte. Dr. Rivers gave a very comprehensive paper on the "Etiology and Treatment of Peptic Ulcer."

According to Dr. Rivers, who has made an intensive study of his subject, statistically, experimentally and clinically, there are three causative factors: (1) the local tissue trauma factor produced by such chronic irritations to the mucous membrane as coarse foods and chronic infectious foci; (2) the acid pepsin-tissue defense factor, without acid chronic peptic ulcer won't occur"; (3) the systemic or nemogenic factor. Dr. Rivers states that the periods of activity of ulcers coincide with periods of worry, depression, and fatigue and that periods of relaxation are unusual among chronic peptic ulcer victims. His statistics show that there are thirty-eight times as many peptic ulcers among the physicians of the Mayo Clinic as there are among the average southern negroes.

The therapeutic suggestions are directed toward eradication of the etiological factors; systemic investigation; period of observation; elimination of foci of infection from tonsils, teeth, sinuses, appendix and gall bladder; vaccines (autogenous, if possible), foreign proteins; elimination of foreign bodies and diaphragmatic hernia.

A discussion followed and Dr. Rivers was given a rising vote of thanks for the excellent presentation of his subject. The meeting was adjourned.

J. LAWTHER, Secretary.

MONROE COUNTY

Dr. H. H. Cummings, Ann Arbor, councillor of the district, was the guest of Monroe County Medical Society, April 19, 1934, at its dinner meeting at the Park Hotel. There was a large attendance to greet him. Dr. Cummings spoke on "Gynecology and the General Practitioner."

A large group from Monroe County attended the District Post-Graduate Conference in Adrian, May 10. It was a very pleasant and profitable meeting.

FLORENCE AMES, Secretary.

LIVINGSTON COUNTY

Following the usual Sanatorium dinner at 7:00 p. m. a brief business session was called to order by the president. There were in attendance eighteen members and guests, including representatives of the Livingston County Dental Society.

The minutes of the April meeting were presented and approved as read. No action was taken on any matter of importance but a general discussion followed a report of Dr. Hollis Sigler, who acted as alternate at the recent special meeting of the House of Delegates held in Flint in April. While no resolutions on this subject were passed, the consensus of opinion of our members was that the acknowledgment of the principle of medical insurance by the House of Delegates might prove to be an unfortunate step at this time. It was felt that mutual insurance is not the answer to the economic problem and that in the end either private insurance companies or some form of politically-made state insurance would eventually consume it. The fact was recognized that the plan presented at Flint was a form of contract practice and was characterized in part by certain shortcomings that would be very hard to remedy.

The secretary again announced a Post-Graduate Conference of the 14th Counselor District to be held at Adrian, May 10, and the program was read.

Following the business session we were delighted with an illustrated presentation by Dr. Claire Straith, of Detroit, on "The Plastic Repair of Deformities and Injuries to the Face, with Particular

Reference to Those Caused by Automobile Accidents." The various members were one in the opinion that the plastic surgeon of today has achieved an enviable goal in his specialty. Doctor Straith has our whole-hearted thanks for his remarkable presentation.

R. S. ANDERSON, M.D., *Secretary*.

ST. CLAIR COUNTY

A regular meeting of the Society was held at the Harrington Hotel, Port Huron, Michigan, Tuesday, April 17, 1934. Supper was served to four guests and nineteen members and before the program began twenty-eight were present.

The meeting was called to order by the president, Dr. A. B. Armsbury. The minutes of the preceding meeting were read and approved. The special committee consisting of Doctors Burley and Brush, appointed at the last meeting to interview the management of the Harrington Hotel, made a report. Upon a motion by Doctor Heavenrich, supported by Doctor DeGurse, Dr. M. E. Vroman, a former member of our society for many years, was reinstated by a vote of the Society. The censors reported favorably upon the application of Dr. Wilbur S. Henderson and upon a motion acted upon in the affirmative the secretary was instructed to cast a ballot electing him to active membership.

Doctor Brush introduced the guest of the evening, Dr. A. E. Catherwood of Detroit, who addressed the Society upon the subject, "Bleeding in the Last Trimester." Doctor Catherwood confined himself largely to two conditions: premature separation of the placenta and placenta previa, discussing the pathology, etiology, symptoms, diagnosis, differential diagnosis and treatment of the two conditions. Discussion was opened by Dr. D. J. McColl, followed by Doctors Cooper and Brush, after which Doctor Catherwood closed the discussion. In conclusion the president thanked the speaker for his address and the Society gave him a rising vote of thanks. Meeting adjourned at 9:15 p. m.

A regular meeting of the Society was held at the Harrington Hotel, Port Huron, Michigan, Tuesday, May 1, 1934.

Supper was served to thirty guests and members and before the program began at least thirty-five were present.

At the request of the president, Dr. A. B. Armsbury, T. E. DeGurse of Marine City introduced Dr. Angus McLean with a brief but complimentary tribute to his professional attainment, his splendid character and his fatherly association with so many of the active physicians of the day in this section of the state. Doctor McLean made an impromptu address in which he discussed the early history and accomplishments of the profession, called to mind many incidents of the past forty years in his professional experience in and about Detroit and gave those present the benefit of some very splendid advice with regard to the future of the medical profession. The president then called upon Doctors Waters, Heavenrich, McKenzie, Cooper, DeGurse, Pollock and Robb in the order named, who continued in reminiscence and in compliment to Doctor McLean. During the address of Doctor McLean as well as throughout the talks which followed one had only to observe the faces of those present to realize the enjoyment experienced as all listened to their former teacher and their present friend and counselor. Doctor McLean closed the evening program in the usual manner and was given a rising vote of thanks by the Society. Meeting adjourned at 9:30 p. m.

The last regular meeting of the Society for the spring season was held at the Harrington Hotel, Port Huron, Tuesday, May 15, 1934. Supper was served to thirty-one members and guests at 6 p. m., and at the time President Armsbury called the meeting to order seven guests and thirty members were present. The minutes of the preceding meeting were read and approved.

Several communications were read. Doctor Best of Lapeer invited the members of Saint Clair County Society to attend the testimonial dinner in honor of Doctor Tinker of Lapeer to be given on May 24. Doctor Heavenrich read an invitation to former internes of Harper Hospital to attend an organizational dinner at Detroit on May 24 at which time an alumni association is to be formed.

The president requested Doctor Heavenrich to introduce the guest of the evening, Doctor Frederick C. Kidner, and Doctor Heavenrich did so in a few well chosen words. Doctor Kidner's talk on the treatment of the more common fractures was illustrated by lantern slides. The speaker stressed the importance of correct early care and the desirability of referring most fractures to someone who was giving special attention to fractures. He also emphasized the fact that fractures giving rise to pain after reduction and splinting were not in correct position and must needs be retreated at once to avoid bad result. In the opinion of Doctor Kidner 95 per cent of all femur fractures may be successfully treated on Balkan frame or Thomas splint. Volkmann's paralysis was dwelt upon at some length and care advised in treatment of fracture about the elbow. Discussion by Doctors Sites, MacKenzie, Patterson, Heavenrich, Attridge, Brush, Carney, Boughner, Armsbury and Smith.

The meeting adjourned, after a rising vote of thanks, at 10 p. m.

GEORGE M. KESL, *Secretary-Treasurer*.

TUSCOLA COUNTY

The regular meeting of the Tuscola County Medical Society was held at the Hotel Montague, Caro, Michigan, April 19, 1934. The meeting was attended by members of the allied professions of medicine, dentistry, and pharmacy of Tuscola County. A dinner was served at 6:45 P. M.

Outline of Program:

A ten minute discussion by a member of each group.

A round table discussion limited to three minutes each.

Talking pictures on preparation and use of insulin, presented by Eli Lilly Company.

Dr. O. G. Johnson, of Mayville, president of the Medical Society, conducted the meeting. He gave a short introductory address of welcome to the druggists and pharmacists, and an outline of the purpose of the meeting.

Mr. George Moore, pharmacist of Caro, gave an interesting discussion of the history of pharmacy and its relation to the healing art.

Dr. George H. Steele, dentist at Vassar, presented a ten minute discussion of the professions, their inter-relations, their public relations, and political economy.

It was the expressed opinion that a political group consisting of doctors, dentists and druggists would be a strong political factor in the community. It was agreed that the three groups had logical common grounds for such an organization. It was agreed that such a group should be non-partisan. It was suggested that we utilize the political strength of the combined groups to prevent destructive governmental interference.

Next, followed an hour of round-table discussion

It was proposed that a permanent organization of the three groups be formed. That meetings be held at various times. That a liaison group, consisting of the secretaries of the three county societies be made, as a permanent committee. That the purpose of the organization is to be entirely political and non-partisan. That all the members are urged to examine carefully all political movements, local, state and national, and report to their committee. Meetings will be called at the discretion of the committee to take definite stands upon political questions which seem of importance to any or all of the groups.

The committee for liaison among the three groups was named as follows: Dr. L. L. Savage, Caro, Michigan, Medical Society; Dr. Schenk, Cass City, Dental Society; Mr. Carl Palmer, Caro, County Druggists.

WAYNE COUNTY

The Medical Service Bureau of the Wayne County Medical Society, created to bring complete medical care to employed persons of small means, including their families, has started to function, with experimental work. Two hundred seventy-seven patients have been served by the Bureau, to May 10, 1934. The patients receive medical and hospital attention at the time when required and make arrangements with the Medical Service Bureau for the payment of their coördinated bills. In all cases, satisfaction has been expressed by the patients (gratitude would be a better word), as well as by the physicians who handled the cases, the hospitals, and the employers. The Bureau presents a plan to each employee so that coördinated bills are liquidated over a maximum of fifty-two weeks. Due to co-operation and enthusiasm from the industrialists, arrangements for regular and certain payment of these bills have been satisfactorily made.

The Medical Service Bureau is a busy department of the Wayne County Medical Society and eliminates the hazard of postponed necessary medical care. It helps the people; it helps the medical man.

* * *

The Federal government, through the Wayne County Emergency Relief Commission, has given proof of its confidence in the Wayne County Medical Society by inaugurating its Medical-Dental Bureau in the W. C. M. S. Building with Health Service Coördinator Wm. J. Burns in charge. The Bureau is the clearing house for home and office medical care of unemployed welfare sick. It employs twenty-three assistants and has a ten trunk line switchboard in the W. C. M. S. building. It maintains twenty-four hour service, Sundays and holidays, included. The work of the Bureau is running smoothly; the profession is helping to run its own business.

The Cafe of the Wayne County Medical Society will continue to serve luncheons to members and their guests during the summer period. Luncheon is served from 11:30 a. m. to 2:30 p. m. daily, except Sunday. The Cafe offers tempting well-cooked food, served nicely, in beautiful surroundings, at surprisingly reasonable prices. You are invited to drop in at 4421 Woodward at Canfield, Detroit, and enjoy the W. C. M. S. Cafe and club rooms and meet some of your old friends the next time you are in Detroit.

Detroit will be represented by some one hundred fifty physicians at the Annual Meeting of the A. M. A. in Cleveland the week of June 11th.

The American Medical Golfing Association Tournament at Mayfield Country Club will start the week, on Monday, June 11. Write Bill Burns, 4421

Woodward Avenue, Detroit, for an application blank, and join the boys at Mayfield for a great party.

WM. J. BURNS, *Executive Secretary.*

WOMAN'S AUXILIARY, MICHIGAN STATE MEDICAL SOCIETY

MRS. ELMER L. WHITNEY, *President*
18224 Wildemere Ave., Detroit

MRS. C. L. STRAITH, *Secretary-Treasurer*
19305 Berkley Road, Detroit

Mrs. James Blake, president of the Woman's Auxiliary to the American Medical Association, has just returned from a visit to Cleveland where she went over the plans for the annual meeting with the Cleveland women. A very capable group of doctors' wives, under the able supervision of Mrs. Clyde L. Cummer, has charge of the social affairs for the convention. The tentative program of entertainment follows:

Monday, June 11—

Luncheon of Auxiliary Board at the Hotel Carter.
Dinner in honor of Past President and Board at Hotel Carter.
Mrs. Alfred Maschke, Chairman.

Tuesday, June 12—

Luncheon, Bridge and Style Show, Lake Shore Hotel.
Mrs. Oliver A. Weber, Chairman.

Wednesday, June 13—

Auxiliary Luncheon at the Hotel Carter.
Mrs. Russell H. Birge, Chairman.

Thursday, June 14—

Luncheon at Country Club, Sightseeing Tour.
Mrs. James R. Driver, Chairman.
"Bring-Your-Husband Dinner"—Hotel Carter.

Friday, June 15—

Women's Golf Tournament, Wentwood Country Club.
Mrs. E. D. Saunders, Chairman.

Along with this splendid social program, which is entirely in the hands of the wives of the Cleveland members of the American Medical Association, will go a program of business planned and directed by the Auxiliary. The reports to be heard and the business to be transacted this year are of such import that the meeting cannot help being of exceptional interest to every Auxiliary member. Decide to be with us in Cleveland from June 11 to 16.

Bay County: The Woman's Auxiliary to the Bay County Medical Society were delightfully entertained at the home of Mrs. M. R. Slattery, 909 N. Lincoln Ave., Bay City, on April 11th. Following the buffet supper, which was served to twenty-five guests, Mrs. Slattery showed moving pictures of the Bay City doctors, which Dr. Slattery had taken during the past few years. Later bridge was played.

(Mrs. E. C.) JOSEPHINE S. MILLER,
Publicity Chairman.

Saginaw County: Twenty-four members of the Auxiliary to the Saginaw County Medical Society met for a luncheon and bridge party Friday, April 20, at the Robinson tea rooms. The regular business session of the auxiliary also was conducted, Mrs. J. A. McLandress, president, presiding. Prizes at contract went to Mrs. L. C. Harvie and Mrs. Richard Ryan, while high scores at auction were held by Mrs. Henry J. Meyer and Mrs. Frank Ostrander, of Free-land. Mrs. J. Orton Goodsell, Jr., received the house prize. Mrs. Robert Jaenichen was chairman of the day.

(Mrs. ROBT.) DOROTHY JAENICHEN,
Publicity Chairman.

Wayne County: On Tuesday, April 10, the third and last Public Relations meeting of the season was

held at the Metropolitan Methodist Church. Invitations were sent to all the Mothers Clubs of the Y. M. C. A., the Parent-Teachers' Association, and the various churches and health organizations in the city.

Mr. Wm. J. Burns, executive secretary of the Wayne County Medical Society, acted as toastmaster at the luncheon which opened the meeting, and those who brought salutations included Dr. M. S. Rice, pastor of the Metropolitan Methodist Church; Dr. Alexander W. Blain, President of the Wayne County Medical Society; Mrs. Claire L. Straith, President of the Auxiliary; Mrs. James Blake, President of the Auxiliary to the American Medical Association; Dr. Fred M. Meador, Medical Director of the Department of Health; Dr. A. O. Brown, member of the Advisory Committee of the County Medical Auxiliary; Dr. Wm. J. Stapleton, Jr., Director of the Speakers' Bureau of the County Medical Society; Miss Mable L. McNeel, President of the Michigan State Nurses Association; Miss Emily Sargent, Director of the Visiting Nurses Association; and Miss Grace Ross, Superintendent of Nursing of the Department of Health.

After the luncheon the gathering adjourned to the auditorium to hear the speaker of the day, W. W. Bauer, M.D., of Chicago, Director of the Bureau of Health and Public Instruction of the American Medical Association.

Mrs. Harold F. Sawyer read the poems "The Doctor" and "The Doctor's Wife," by Flora Wells Moon; and Mrs. Frank W. Hartman, vice-president and program chairman of the Auxiliary, introduced the speaker.

Dr. Bauer chose as his subject, "Popular Beliefs That Are Not So," which included information about prenatal care and childbirth, communicable diseases, cosmetics, medical fallacies and food foolishness.

In speaking of prenatal care and childbirth Dr. Bauer said that the adage that "the mother must eat for two" is true in quality, but not in quantity. The old saying "a tooth for every child" is not necessary nowadays, for if the mother will eat foods rich in minerals she will protect her own teeth as well as assure strong teeth for her child. The superstitious idea that a premature baby of eight months is not as likely to live as one of seven months is foolish. In fact, the eight months baby should be stronger than the younger one.

Regarding communicable diseases, Dr. Bauer said that contrary to general opinion, they are more contagious at the beginning than at the end of the illness. It is in the beginning that the sick should be isolated. Also, the old belief that "a child should have communicable diseases as early as possible and get them over" is very wrong—every case of a mild contagious disease is a potential death. Some people believe that there is something akin to magic in chemical disinfectants. The important protection is an earnest application of spring housecleaning. A chemical disinfectant is a trimming, which may be used if liked. Unless the room is first well cleaned, fumigators will do no good. They are a sacrifice on the altar of ignorance—and a bad odor. The idea that one can have a contagious disease only once is not correct, but repetition is uncommon. Disease is communicated mainly by those infected because the infection is carried in the secretions of the nose and throat.

Concerning cosmetics Dr. Bauer said that personal appearance often means a great deal mentally. Some of the modern advertisements, such as the one about halitosis, cause a great deal of worry to overly sensitive people who imagine that they are subjects of the affliction described. It is not true that certain creams cause hair to grow where it would not otherwise. All forms of hair removers or depilatories are dangerous and unsatisfactory. The only permanent way of removing hair is with the electric needle, but this leaves small scars, is painful, and must be done by an expert. Regarding the growing of hair, Dr. Bauer says that some baldness is caused from scalp infections, and can be prevented if the cause is removed. Tonics are no good where a man's forehead grows more intellectual as time goes on. The only thing he can do is to be proud of it, wear a wig or wear a skull cap. There is no such thing as a wrinkle remover. Freckles are deeper than the skin and cannot be removed without first removing the skin.

In connection with medical fallacies, Dr. Bauer spoke especially about the dangerous drugs people are using in an effort to regulate their weight. The unwise use of thyroid tablets often proves fatal, though something can be done if a physician is consulted in time. But, there is a new

drug on the market (dinitrol phenol), which people must be warned against. It will reduce and it will also kill. When too much of this drug has been taken there is nothing that can save its victim. Taking it is literally playing with explosives and flirting with death.

Dr. Bauer said that there is a tremendous amount of foolishness peddled about food and diet. Our slogan might well be "Vitamin Hungry America." In magazines we see pictures of European doctors side by side with American intestines. We are advised to take cough drops for vitamin A, when we can get all we need by eating eggs, butter and green vegetables. Vitamin B is found in yeast and the wheat germ. The food in modern prisons supplies sufficient vitamin C for a normal diet. Vitamin D is the vitamin found in sunshine and cod liver oil and which we meet in the form of concentrates. Vitamin G is the last of the list now known, and northerners need not worry about it. The wise thing to do is to eat a good rounded, sensible diet and forget all about food fads.

Approximately three hundred people heard Dr. Bauer's talk and the many inquiries during the question period which followed indicated the interest and thought which his subject had aroused. It should be added that he not only spoke most instructively but very entertainingly as well.

Mrs. James Blake, president of the Auxiliary to the American Medical Association, was an unexpected and most welcome guest on this occasion. She gave a very interesting and inspiring talk at the regular business meeting which followed Dr. Bauer's speech. She said that doctors' wives could be of most help to their husbands by broadening their own viewpoint. They should get over their lopsided way of thinking by reading magazines and attending lectures presenting the other side of the question. In this way they can prepare themselves to answer the questions of the laity and be real medical informants. She also said that May Day is Health Day and its celebration should belong to the auxiliaries of the medical societies.

One of the most important meetings on the calendar of the Woman's Auxiliary was the annual meeting. This took place on Tuesday, May 8.

The yearly reports were read and officers for the coming year elected. The results of the election were, as follows: President, Mrs. Frank W. Hartman; first vice president, Mrs. J. H. Dempster; second vice president, Mrs. L. O. Geib; third vice president, Mrs. Frederick C. Kidner; recording secretary, Mrs. H. J. Hammond; treasurer, Mrs. Roger V. Walker; corresponding secretary, Mrs. Harry W. Plaggemeyer; financial secretary, Mrs. H. F. Sawyer; custodian, Mrs. Wm. E. Blodgett.

Delegates to the State Convention: Mrs. Claire L. Straith, Mrs. S. W. Plaggemeyer, Mrs. J. Milton Robb, Mrs. Jas. H. Dempster, Mrs. Gerald A. Wilson, Mrs. Frank W. Hartman.

Alternates: Mrs. H. Wellington Yates, Mrs. Basil L. Connelly, Mrs. Clifford B. Loranger, Mrs. Allan W. McDonald, Mrs. Clarence I. Owen, Mrs. Chas. J. Barone.

Through the courtesy of the United Concert Artists' Management, Clarice Stambaugh, dramatic soprano, accompanied by Melvin Zeidler at the piano, presented a group of soprano solos.

Mrs. J. H. Dempster and Mrs. Edwin S. Sherrill presided at the tea table and Mrs. Louis J. Morand, Mrs. George M. Denis and Mrs. A. S. Whittaker were hostesses for the day. Tea and a What-Not and Bake Sale completed the program.

A Spring Card Party was given by the Ways and Means Committee of the Auxiliary at the club house on Wednesday, May 16. This formed a climax to the neighborhood bridge groups which met during the year. The two members from each group having highest total scores were invited to play as a team in a tournament composed of similar teams from all the groups, and extra prizes were awarded the winners. The party was limited to fifty tables. All members of the neighborhood bridge clubs and their friends were invited. There were table prizes,

door prizes and refreshments. During the afternoon Mrs. V. P. Moisesides presented a delightful group of piano solos.
(MRS. CLIFFORD) LORRAINE E. LORANGER,
Publicity Chairman.

MICHIGAN'S DEPARTMENT
OF HEALTH

C. C. SLEMONS, M.D., Dr.P.H., Commissioner
LANSING, MICHIGAN

SCARLET FEVER INCIDENCE HIGH

From time to time we have called attention to the high incidence of scarlet fever. Perhaps few physicians realize just how prevalent the disease has been during the last year or two. A brief review of some statistics in this connection will help.

The calendar year 1933 closed with 16,269 cases reported for the state. This was the highest number for any year in the records of the department covering the period since 1900. It was approximately 30 per cent greater than the mean for the last five year period. Scarlet fever behaves quite regularly according to season. In Michigan the incidence reaches a low ebb about August or the first of September and from that point climbs slowly but with increasing rapidity until it reaches a high mark during December or January. From then it usually continues on a level of a high plateau until some time in April or May, after which it declines rather rapidly.

We believe it of interest to study the incidence in some of the cities for the first four months of 1933. For this period there were reported in the state as a whole 190 cases per 100,000 population. Below is a table of the larger cities having rates higher than that of the state as a whole:

City	Rate per 100,000 population	Cases
Flint	799	1145
Muskegon	708	348
Kalamazoo	580	293
Jackson	471	230
Owosso	428	62
Niles	344	29
Lansing	315	218
Muskegon Heights.....	276	41
Ishpeming	271	17
Marquette	250	30
Ann Arbor	249	63
Pontiac	236	131
Grand Rapids.....	221	333

In general, it may be said that rural communities surrounding these cities have rates somewhat comparable. Usually the rural rate is a little lower. It is of interest to note that counties having full-time county health departments generally have a very much higher rate than other rural districts. This is unquestionably due to a more complete reporting that comes with better organization.

The high incidence of scarlet fever in Flint and vicinity began early in the season and has been continuous. There was a total of 1,251 cases reported for the first four months of the year. There was apparently little indication of a decline at the end of April. The same thing may be said regarding Muskegon except that perhaps there was a little more indication of decline. Jackson and Grand Rapids had a relatively low incidence until late in the season but increased rapidly during March and April. Pontiac's incidence has also increased considerably during the latter part of the period in question.

Battle Creek, Saginaw and Bay City are all below the state rate, there being only four cases reported in Bay City for the four months. Detroit, with 137

per 100,000 for the period in question, is also below the state rate. There have been a number of scattered areas in rural districts in the Upper Peninsula, particularly in the western part, with a quite high rate. Charlevoix and Alpena have also recently been rather high.

There are no figures available concerning the case fatality rate for this period. It is known that a great majority of the cases are quite mild. There was, however, a 40 per cent increase in the number of deaths for the calendar year 1933 as compared to 1932. The great number of cases with symptoms exceedingly slight and atypical continues to make the problem of control a very complicated one. In many of these cases no physician is called.

C. D. B.

A NEW COUNTY HEALTH UNIT

The establishment of another full-time county health department has been made possible by the W. K. Kellogg Foundation. The fortunate county is Van Buren. By vote of the county board of supervisors the offer of the Foundation to provide most of the funds for such a unit was accepted. The state will contribute the usual \$3,000 per year subsidy, and the county will provide office space and furnishings. It is expected that the unit will be ready to start on July 1. The personnel has not as yet been announced.

VIOLATING VENEREAL DISEASE QUARANTINE
BRINGS IMPRISONMENT

Two women, pleading guilty to violating quarantine for venereal disease, were sentenced on April 16 to one year in the Detroit House of Correction by Circuit Judge Collingwood of Lansing.

Complaint was made to the Michigan Department of Health by the sheriff of Ingham County, referred by the Lansing Welfare Department. The two women, who were reported to be running a house of prostitution in a village near Lansing, had been examined by the health officer and quarantined for venereal disease. They had been instructed by him not to leave the premises except to come to his office for treatment, with transportation furnished by the welfare department. Disregard of this order brought the matter to the attention of the sheriff. On the advice of the law enforcement officer of the Michigan Department of Health, the sheriff signed a complaint against the women for breaking quarantine.

The charge was violation of Public Act 17758, which made it a Circuit Court misdemeanor. The women plead guilty and were sentenced by Judge Collingwood to a state reformatory for one year, which automatically meant to the Detroit House of Correction.

JACKSON LOSES IN COURT ACTION

Damages of \$750 against the city of Jackson for pollution of the Grand River with sewage have been awarded to a Rives Township farmer by Circuit Judge James S. Parker. A court order was also issued requiring that the city take steps to alleviate "the intolerable conditions" within 90 days. About seventy similar suits have been awaiting the outcome of this case.

Bond issues for a sewage disposal plant have been rejected repeatedly by Jackson voters, and a request for a P.W.A. grant for this purpose has been pending for several months. The city will attempt to secure immediate action on the federal grant and, failing that, will submit another bond issue to the people.

The city attorney of Jackson has announced that the case will be appealed to the Supreme Court.

OBITUARY

DR. EDGAR V. BEARDSLEE

Dr. Edgar V. Beardslee of Highland Park, Michigan, died May 10 at the Highland Park General Hospital. He was born in Pontiac forty-nine years ago. His early education was obtained at the Ferris Institute at Big Rapids and the Ann Arbor High School after which he entered the University of Michigan where he received his medical degree in 1916. In 1917 he began practice in Highland Park. Dr. Beardslee was elected commissioner in Highland Park a year ago largely through the influence of the medical profession of the city. He was a competent accountant and took over the position of finance commissioner. Dr. Beardslee was a member of Highland Park Lodge, No. 468, F. & A. M., and Highland Park Commandery, Knights Templar. He was president of the Highland Park Physicians' Club and a member of the Wayne County and State Medical Societies. He was also a member of the Detroit Golf Club. Surviving are the widow; a daughter, Betty Jane; his father and a brother, Oliver, both of Pontiac.

DR. ROBERT Y. FERGUSON

Dr. Robert Y. Ferguson of Pontiac died on March the twentieth. Dr. Ferguson was born in Hensall, Ontario, and was educated in the Canadian Public and High schools. He graduated from the Detroit College of Medicine in 1896 and began the practice of medicine in Caledonia, Minnesota. He returned to Michigan two years later and located in Pontiac, where he practiced medicine and surgery up to the time of his death. Dr. Ferguson joined the Oakland County Medical Society shortly after locating in Pontiac. His keen interest in medical affairs is seen in his election as President of the Oakland County Medical Society. Dr. Ferguson was popular not only as a citizen but was beloved by all members of the medical profession that knew him.

DR. IGNATZ MAYER

Dr. Ignatz Mayer of Detroit died, April 26, 1934, after an illness of five days. He was born in Vienna in 1860. He received his academic training at St. Joseph's College, Budapest, where he obtained the A.B. degree. He migrated to the United States at the age of twenty, having secured a position as a writer for a German newspaper in New York. He eventually studied medicine at the Medico Chirurgical College, now part of the University of Pennsylvania. The past thirty-five years he had practiced medicine in Detroit. In 1899 he married Miss Nannette Phipps, who survives him. Dr. Mayer was fond of travelling and during his practice had made numerous voyages to European capitals and other post-graduate centers abroad. He was an accomplished linguist with fluent command of English, French, German, and Hungarian. He was a member of Wayne County Medical Society, Michigan State Medical Society, and the American Medical Society.

CORRESPONDENCE

FIRST APPLICATION

Battle Creek, Michigan
April 25, 1934

Dear Dr. Warnshuis:

At a meeting of the Battle Creek Academy of Medicine and Dentistry held April 24, 1934, a resolution was adopted empowering me, as secretary of the organization, to request from the executive committee on Economics of the Michigan State Medical Society that Calhoun County be chosen as one of the first counties in which to carry out experimentation of the proposed plan of Medical Insurance.

We feel that our Academy, being the first organization of its kind formed for the express purpose of dealing with the economic phases of Medicine, is well equipped to carry out the proposed Health Insurance plan, both authoritatively and with the entire Medical and Dental professions working as a unit.

Very truly yours,

H. C. HANSEN, *Secretary-Treasurer*,
Battle Creek Academy of Medicine and Dentistry.

BOARD EXAMINATIONS

Lansing, Michigan.
May 4, 1934.

Dear Doctor Warnshuis:

Will you please see that the dates for the examinations of the Michigan State Board of Registration in Medicine are published in the JOURNAL as follows:

Ann Arbor, Michigan, June 5, 6 and 7, 1934.
Detroit, Michigan, June 12, 13 and 14, 1934.

Thanking you, I am

Yours very truly,
J. E. McINTYRE, M.D., *Secretary*.

ANNOUNCEMENT

The Gynecean Hospital Institute of Gynecologic Research of the University of Pennsylvania is conducting an intensive study of families into which congenitally malformed individuals have been born.

Special interest centers in families in which malformations have appeared in two or more children. Physicians who have knowledge of any such families are urged to communicate with:

DOUGLAS P. MURPHY, M.D.
Gynecean Hospital Institute,
University of Pennsylvania,
Philadelphia, Pa.

DINITROPHENOL

Grand Rapids, Michigan
May 166, 1934

Dear Doctor Warnshuis:

In reply to your request for information concerning the use of alpha dinitrophenol I am sending the following report:

Seven obese patients, all women, were given the drug in the Kent County Relief Clinic. These patients varied in age from twenty-five to fifty. They were well except for their obesity. Two of them had previously taken thyroid extract and reported that they felt much better while taking dinitrophenol than during the period when thyroid was taken. They complained of some degree of palpitation and nervousness with thyroid extract which they did not have while taking dinitrophenol. Most of the patients in this group noticed excessive warmth for

some hours after taking the drug. You will observe that the usual dosage in this group was 5 grains a day given in one dose. At present we are giving smaller dosage, rarely giving more than 2 grains a day because of reactions reported by others. Most of the patients state that they feel better while taking the drug and this fact is evidenced in that they continued the use of it for rather long periods of time.

One mild urticarial reaction occurred in a patient not listed in this group and the drug was discontinued in her case. In Case 6 and in one other case not listed there was a failure to lose weight appreciably.

Case	Weight	Dose	Time	Weight Loss
1	156 lbs.	grs. 2 B.i.d.	11 weeks	23 lbs.
		grs. 2 daily	10 weeks	(2 lbs. gain)
2	300+ lbs.	grs. 5 daily	26 weeks	28 lbs.
3	200 lbs.	grs. 5 daily	10 weeks	15 lbs.
4	315 lbs.	grs. 5 daily	24 weeks	44 lbs.
5	270 lbs.	grs. 5 daily	15 weeks	13 lbs.
6	293 lbs.	grs. 5 daily	6 weeks	0 lbs.
7	227½ lbs.	grs. 5 daily	8 weeks	
		grs. 3 daily	3 weeks	15 lbs.

This group is too small and the cases were not under complete enough observation to be of any great scientific value. Metabolism tests were not done and the patients were not on standard diets. It is interesting to note, however, that we experienced only one minor skin reaction in ten cases on very large dosage. It is also interesting that most of the patients lost weight rapidly and felt better than they did without the drug.

We hope this brief report will be of some use to you in collecting information on this very interesting drug.

PAUL W. KNISKERN, M.D.

Kent County Welfare Relief Commission.

GENERAL NEWS AND ANNOUNCEMENTS

A district conference was held in West Branch May 23 and in Cadillac May 31, 1934.

Michigan should have a large registration at the A. M. A. meeting in Cleveland the week of June 10. Are you going?

The eighty-fifth annual session of the American Medical Association will be held in Cleveland, Ohio, June 11-15, 1934.

More than 500 requests have been received from out of state for copies of the May supplement, containing the plan for a Mutual Health Service.

Dr. George C. Chene of Detroit was tendered a testimonial dinner on May 3 by the staff of Providence Hospital in recognition of his twenty years of service as roentgenologist and secretary of the staff of the hospital.

Dr. H. A. Luce, Chairman of the House of Delegates of the Michigan State Medical Society, addressed the West Side Medical Society, Detroit, at their regular meeting on the evening of May 3. He discussed the deliberations of the House of Delegates at a special meeting held in Flint, also the report of the committee on economics.

Dr. J. B. Campbell of Big Rapids has been elected mayor of the city. Dr. Campbell has practiced in Big Rapids since 1900. He is also president of Mecosta County Medical Society. Dr. Campbell becomes mayor after four years as city commissioner. He is the fourth physician to occupy the mayor's chair.

An advisory committee of otologists was appointed April 25, 1934, by Dr. Fredrick T. Munson, president of the Detroit Oto-Laryngological Society, upon request of the Detroit League for the Hard of Hearing, consisting of Dr. Don M. Campbell, Dr. B. R. Shurly, Dr. H. Lee Simpson, Dr. Howard W. Peirce and Dr. Neil Bentley.—*The Rainbow*.

The officers of the Northern Tri-State Medical Society for the year 1934-35 are as follows: President, Dr. H. E. Randall of Flint, Mich.; vice president, Dr. Edward P. Gillette, Toledo, Ohio; secretary, Dr. G. E. Jones, Lima, Ohio; treasurer, Dr. P. N. Sutherland, Angola, Indiana. The council consists of Dr. Charles Lukens, Toledo, Ohio; Dr. W. H. Marshall, Flint, Michigan, and Dr. G. O. Larson, LaPorte, Indiana. The next meeting will be held on April 10, 1935.

The Geographic Distribution of Peptic Ulcer by Hugo Muller, M.D., of Detroit, Michigan, is the title of an article which appears in the March number of the *American Journal of Surgery*. Dr. Muller, who is a member of the Wayne County Medical Society, is to be commended on the immense labor the preparation of this paper entailed. The statistics have been gleaned from countries as far apart as Mexico, Argentina, Africa, Syria, India, China, the Dutch East Indies, Australia and Europe.

WASHTENAW ANNUAL MEETING

The annual joint meeting of the Washtenaw County Medical, Dental and Legal Societies was held at the Michigan Union at 6:30, May 8, 1934. Approximately one hundred persons were present. The Society had as its guests J. F. Warner and R. M. Burr, who are candidates for the State Legislature. Following the dinner an address was given by Honorable Herbert Orr of Caro, Michigan, a long time member of the State Senate. Mr. Orr spoke on general legislative trends. He deplored the excessive amount of legislation being demanded by organized minorities, who do not represent the will or the best interests of the majority. He regretted the surrender of representative government to the modern government by commissions, and finally exhorted every educated person to interest himself in his government and to repay the state for its investment in him by protecting it from the selfish exploitation by powerful minorities.

The following candidates were elected to membership. Frank Hartsuff Bethell, Sherwood R. Russell, Thomas M. Durant, W. E. Schumacher.

WAYNE COUNTY MEDICAL SOCIETY ELECTION

Dr. W. J. Cassidy, who was made president-elect a year ago, assumes office as president of the Society. Dr. R. C. Jamieson was elected to the office of president-elect. Dr. C. F. Brunk, secretary, Drs. A. W. Blain and Joseph Audries were elected as members of the Board of Trustees.

The election of the House of Delegates resulted as follows: *Delegates*—J. M. Robb, A. W. Blain, W. J. Cassidy, R. H. Pino, W. D. Barret, H. W. Yates, G. C. Penberthy, A. E. Catherwood, R. M. McKean, L. J. Hirschman, J. L. Chester, H. F. Dibble, C. F. Brunk, H. W. Plaggemeyer, George Kamperman, W. R. Clinton, L. J. Gariepy, S. A. Flaherty, A. P. Biddle, D. I. Sugar, S. W. Isley, L. O. Geib, E. D. Spalding, L. T. Henderson, H. A. Luce.

Alternates—E. C. Baumgarten, C. K. Hasley, B. C. Lockwood, L. J. Morand, Wm. J. Stapleton, Jr., C. E.

Dutchess, Wm. A. Evans, Wm. S. Reveno, R. Lee Laird, Roger V. Walker, C. E. Lemmon, H. W. Peirce, H. L. Clark, M. H. Hoffmann, J. A. Kasper, A. H. Whittaker, S. P. L'Esperance, R. S. Goux, B. U. Estabrook, C. S. Ratigan, B. L. Connolly, F. B. Burke, J. A. Hookey, J. C. Kenning, C. K. Valade.

DETROIT COLLEGE OF MEDICINE ALUMNI DAY

Annual Alumni Day of the Detroit College of Medicine and Surgery (now the Wayne University College of Medicine) will be held on Thursday, June 7th. Beginning at 9 A. M. at the College Auditorium, diagnostic medical clinics will be held by Dr. Charles Phillips Emerson, Professor of Medicine, Indiana University School of Medicine and William Carpenter MacCarty, director of the Department of Surgical Pathology of the Mayo Clinic. Dr. Emerson was on the Alumni Clinic program in Detroit several years ago and his presentation was so outstandingly brilliant that few who heard him then would willingly miss him this time. Dr. MacCarty's international reputation in general pathology and cancer diagnosis particularly is well known as an added feature. These two men will also conduct a clinico-pathological conference. The Detroit Dermatological Society has arranged a skin clinic which is expected to exceed in interest and teaching value previous clinics for which they are rightfully famous. A noon-day luncheon has been arranged for at the College Auditorium.

The banquet will be held at the Hotel Statler and will be in part a testimonial dinner to Doctors Angus McLean, Don M. Campbell and Andrew Biddle. Doctor James W. Inches will be the principal speaker of the evening. The banquet is the occasion of Class Reunions of the following classes and the chairman of each of these classes has been communicated with and he in turn will contact each member of his class: 1934, 1929, 1924, 1919, 1914, 1909, 1904, 1899, 1894, 1889, etc.

AMERICAN MEDICAL GOLFERS MEET JUNE 11, CLEVELAND

The twentieth annual tournament of the American Medical Golfing Association will be held at the Mayfield Country Club, Cleveland, Monday, June 11. Thirty-six holes and eighteen hole matches will be played for the fifty prizes offered in eight events. This includes the championship event, which has as its major prize the famous Will Walter Trophy, awarded since 1923 for low gross thirty-six holes. This trophy, designed by Edgar Millar and executed by the Cellini Shop, Evanston, Ill., symbolizes the evolution of medicine.

The first handle depicts the age of primitive ignorance, with shaman witch doctor, spells and the invocation of nature gods to cure ailing mankind, from antiquity to 500 B. C. The second handle shows the age of Greek thinkers, bearing the serpents symbolic of Æsculapius, god of medicine—an age of thought and research, from 500 B. C. to 640 A. D. The third handle represents the age of medieval superstition from 640 A. D. to 1500 A. D., with an astrologer, the physician common to the dark ages. The fire of incantation rises behind the figure as he traces a cabalistic sign in the air. The fourth handle depicts the age of modern medical research, from the Renaissance to modern time, with increasing light spreading from a figure symbolic of an enlarging vision.

Winners since the cup was placed in competition have been Drs. E. A. Seaforth, San Francisco, 1923;

George McKee, Pittsburgh, 1924; Homer Nicoll, Chicago, 1925; S. M. Hill, Dallas, Texas, 1926; George McKee in 1927; Walter Shelden, Rochester, Minn., 1928; John Loudon, Yakima, Wash., 1929 and 1930; George McKee, 1931; S. M. Hill, 1932, and Mark Bach, Milwaukee, 1933.

Other Events and Trophies include the Association Handicap, 36 holes net, with The Detroit Trophy; the Choice Score Championship, 36 holes gross, with the St. Louis Trophy; the 18 Hole Gross Championship, with The Golden State Trophy; the 18 Hole Handicap Championship, with The Ben Thomas Trophy; the Maturity Event, with The Minneapolis Trophy; the "Oldguard" Championship, with The Wendell Phillips Trophy; the Kickers Handicap, with The Wisconsin Trophy.

Dr. Homer Nicoll is president; Drs. Charles Lukens, Toledo, and John W. Powers, Milwaukee, are vice presidents of the American Medical Golfing Association, which has a total membership of approximately 1,100, representing every state in the Union. All male Fellows of the American Medical Association are eligible to membership. A cordial invitation is extended to every medical golfer to write the executive secretary, Bill Burns, 4421 Woodward Avenue, Detroit, for an application blank. An enjoyable day on June 11 will be the result.

OF GENERAL MEDICAL AND SURGICAL INTEREST

URETHROCYSTOGRAPHY IN THE MALE

Previous experience with urethrography or cystography enabled Joseph A. Hyames, Herbert R. Kenyon and Samuel E. Kramer, New York, to develop a technic for the performance of urethrocytography by combining several procedures previously advocated by other workers with a simplified manometrically controlled syringe devised by them. The patient is placed on an x-ray table equipped with a Bucky diaphragm. A small catheter is introduced under asepsis, the bladder capacity estimated with sterile water and a quantity of the 3 per cent solution of sodium iodide slightly less than the estimated capacity is introduced through the catheter, which is then withdrawn. The oblique and anteroposterior positions are most satisfactory. During the first exposure the patient is placed obliquely on the table, with the under thigh flexed and the upper thigh extended. The penis is extended, below and parallel to the flexed thigh, and the urethral contrast solution injected through the meatus; the manometrically controlled syringe provides a safeguard against the use of excessive force. The total quantity of fluid used for urethral distention is approximately from 50 to 70 c.c. The use of oily solutions increases the possibility of leakage. The tube is focused on the lower portion of the symphysis pubis and inclined toward the head at an angle of 5 degrees. The roentgen exposure is made as the fluid is flowing freely into the bladder. Should the flow be impeded, the patient is instructed to void as the exposure is made. If the bladder cannot be entered because of impassable obstruction, the bladder contents may be rendered opaque by the intravenous use of a contrast substance, after which the urethra can be filled in the ordinary manner. A second exposure is made with the patient in the dorsal position, the legs extended and the penis drawn down between the thighs. The best roentgenograms are obtained

by using an x-ray apparatus of the greatest penetration, thus diminishing the time of exposure. The authors have found it unnecessary to go above a pressure of 220 mm. of mercury. A drop in pressure of from 10 to 20 mm. is usually noted as the external sphincter relaxes. Pressures exceeding 200 mm. of mercury suggest the possibility of trauma, spasm, or lack of cooperation on the part of the patient, which may prevent satisfactory filling of the posterior urethra. Excessive pressures may result in mucosal injury and, when this occurs in the bulb, the contrast material may enter directly into the vascular system, owing to the intimate relationship of the vessels to the mucosa in this region. In the authors' experience this has occurred only in cases of urethral stricture involving the bulbomembranous junction in which recent instrumentation had been attempted and manometric control was not employed. Although they have not observed any constitutional reaction or permanent ill effects following urethrovenous injection, its occurrence emphasizes the necessity of employing innocuous solutions. Following instrumental exploration of the canal, an opportunity should be afforded for the traumatized urethral areas to heal before urethrocystography is performed. Should both roentgenographic and instrumental investigation be contemplated at one sitting, the former should precede other intra-urethral manipulations. Injections of contrast mediums are contraindicated in the presence of acute infections, active inflammations and recent extensive injuries. The authors discuss the interpretation of urethrocystograms, stricture of the urethra, enlargement of the prostate and observations following operations for vesical neck obstructions and state that the combined method has adequately demonstrated bladder, urethral and adnexal changes and has proved less expensive, less time consuming and more satisfactory as a routine diagnostic method than urethrog-raphy or cystography as individual procedures.—*Journal A. M. A.*

INSULIN IN TREATMENT OF TUBERCULOSIS

Frederick M. Allen, New York, presents a study of more than eighty nondiabetic tuberculosis patients treated with insulin. In general, he has administered more insulin than has heretofore been given to nondiabetic persons. One man received 320 units a day with rapid gain in weight, but this was an exception. Treatment was usually begun with 5 units before each meal and increased to about 40 units three times a day, but individualization should be emphasized as the chief principle. There are individual peculiarities of insulin tolerance. Women are apt to take less than men. Toxic patients usually do not stand as large doses as the nontoxic, contrary to the rule in diabetes. The same individual may differ in his insulin requirement at different times. When small doses are unsuccessful, large doses will sometimes give results and vice versa. When a patient has flourished for several weeks or months on a certain dosage and has perhaps reached normal or slightly more than normal weight, he may begin to show sensitiveness in the form of insulin reactions or nausea and may continue to thrive only after the dose has been reduced. The author has continued the administration of insulin over a period of eight months. The kind and quantity of the diet is also planned to suit the patient, but commonly a mixed diet containing liberal carbohydrate may be given, consisting of not only the usual three meals but also lunches between meals and at bedtime. In

character, the author's cases ranged from mild to moribund. The majority were severe, active and febrile. Reactions are usually easy to prevent and harmless if they do occur. Fever is by no means a contraindication. Hemorrhage also need not be a contraindication, except in a minority of sensitive cases. Rarely, urticaria or other symptoms may prove troublesome, even to the extent of stopping the treatment. Intestinal lesions are more often an indication than a contraindication for insulin. The author's general conclusion from a study of his cases is that in a large proportion of tuberculosis cases ranging from quiescent to severe, the proper use of insulin can produce marked gains in weight, strength and spirits.—*Journal A. M. A.*

THE DOCTOR'S LIBRARY

Acknowledgment of all books received will be made in this column and this will be deemed by us a full acknowledgment to those sending them. A selection will be made for review, as expedient.

NEW AND NON-OFFICIAL REMEDIES, 1934, containing descriptions of the articles which stood accepted by the Council on Pharmacy and Chemistry of the American Medical Association on Jan. 1, 1934. Cloth. Price, Postpaid, \$1.50. Pp. 510; 1x. Chicago: American Medical Association.

New and Non-official Remedies, 1934, has the same pleasing format and helpful mechanism that has characterized it in past years. The enrichment of the indexing started a few years ago is continued and its value even increased by some desirable simplification of cross references.

The Council has made the usual careful revision of the book. The general article Lactic Acid-Producing Organisms and Preparations has been practically rewritten. The chapter on Arsenic preparations has undergone some revision, especially in the statement concerning Neoarsphenamine. The descriptions of Chiniofon and Vioform have been revised in the light of recent developments in the treatment of amebiasis. The article on Ethylhydrocupreine has been revised to delete references to Optochin Base, which has been omitted; Optochin Hydrochloride has been retained, being recommended only for external use. The description of Typhoid Vaccine has been revised to give the dosage of the combination of typhoid and paratyphoid organisms and to mention the use of typhoid vaccine in nonspecific protein therapy. A number of revisions of the Council's Rules have been made, particularly with reference to the names of products, which is one of the most frequent and troublesome of the problems with which the Council has to deal. Comparison with last year's volume will show that revisions of more or less importance occur in many other chapters.

Among the preparations newly included in this volume are: Aminophylline, a double salt or mixture of theophylline and ethylenediamine, with the advantage of greater solubility over other theophylline preparations; the new alum precipitated diphtheria toxoid; Neo-Iopax, a new medium for intravenous urography; Benzedrine, an ephedrine substitute; serums containing Type II pneumococcus antibodies, which the Council has recently recognized as worthy of clinical trial in view of improved preparations and technic; Autolyzed Liver Concentrate and Extralin, two new liver preparations for use in the treatment of pernicious anemia; Metycaine, a new local anesthetic; and Sodium Morrhuate, a salt of the fatty acids of cod liver oil, proposed for use as a sclerosing agent.

The Secretary of the Society will please notify the State Secretary immediately of any errors or change in these offices.

COUNTY SOCIETIES

BRANCHES OF THE MICHIGAN STATE MEDICAL SOCIETY

County	President	Address	Secretaries	Address
ALPENA.....	W. B. NEWTON.....	Alpena.....	HAROLD KESSLER.....	Alpena
BARRY.....	STEWART LOFDAHL.....	Nashville.....	H. L. WOODBURNE.....	Hastings
BAY.....	J. H. McEWAN.....	Bay City.....	L. F. FOSTER.....	Bay City
ARENAC.....				
IOSCO.....				
GLADWIN.....	DEAN M. RICHMOND.....	St. Joseph.....	EDWIN VARY.....	Niles
BERRIEN.....				
BRANCH.....				
CALHOUN.....	A. F. MACGREGOR.....	Coldwater.....	F. L. PHILLIPS.....	Bronson
CASS.....	S. L. LOUPEE.....	Battle Creek.....	HARRY B. KNAPP.....	Battle Creek
CHIPPEWA.....	G. A. CONRAD.....	Dowagiac.....	K. C. PIERCE.....	Dowagiac
MACKINAC.....		St. Ste. Marie.....	F. C. BANDY.....	St. Ste. Marie
CLINTON.....				
DELTA.....	F. E. LUTON.....	St. Johns.....	T. Y. HO.....	St. Johns
DICKINSON-IRON.....	A. J. CARLTON.....	Escanaba.....	W. A. CORCORAN.....	Escanaba
EATON.....	WM. J. KOFMEHL.....	Stambaugh.....	C. P. DRURY.....	Iron Mountain
GENESEE.....	C. L. D. McLAUGHLIN.....	Vermontville.....	JOHN LAW THER.....	Charlotte
GOGEBIC.....	R. S. MORRIS.....	Flint.....	C. W. COWELL.....	Flint
GRAND TRAVERSE.....	F. G. H. MALONEY.....	Ironwood.....	F. L. S. REYNOLDS.....	Ironwood
LEELANAU.....	ROBERT E. HASTINGS.....	Elk Rapids.....	E. F. SLADEK.....	Traverse City
GRATIOT.....				
ISABELLA.....				
CLARE.....	A. D. HOBBS.....	St. Louis.....	B. J. GRAHAM.....	Alma
HILLSDALE.....	H. F. MATTSON.....	Hillsdale.....	D. W. FENTON.....	Reading
HOUGHTON.....				
BARAGA.....				
KEWEENAW.....	P. D. BOURLAND.....	Calumet.....	ARTHUR F. FISCHER.....	Hancock
HURON-SANILAC.....	W. B. HOLDSHIP.....	Ubyly.....	W. J. HERRINGTON.....	Bad Axe
INGHAM.....				
IONIA.....				
MONTCALM.....	R. A. PINKHAM.....	Lansing.....	RUSSELL L. FINCH.....	Lansing
JACKSON.....	M. A. HOFFS.....	Lake Odessa.....	JOHN J. McCANN.....	Ionina
KALAMAZOO.....	C. A. LEONARD.....	Jackson.....	R. H. ALTER.....	Jackson
VAN BUREN.....				
ALLEGAN.....				
KENT.....	CARL F. SNAPP.....	Grand Rapids.....	JOHN M. WHALEN.....	Grand Rapids
LAPEER.....	H. M. REST.....	Lapeer.....	J. R. McBRIDE.....	North Branch
LENAWEE.....	OAT WHITNEY.....	Adrian.....	A. W. CHASE.....	Adrian
LIVINGSTON.....	GEORGE L. LESLIE.....	Howell.....	R. S. ANDERSON.....	Howell
LUCE.....	C. B. TOMS.....	Newberry.....	GEO. F. SWANSON.....	Newberry
MACOMB.....	G. F. MOORE.....	Mt. Clemens.....	JOSEPH N. SCHER.....	Mt. Clemens
MANISTEE.....	ELLERY A. OAKES.....	Manistee.....	ERNEST C. HANSEN.....	Manistee
MARQUETTE.....	T. R. LAUGHBAUM.....	Marquette.....	D. P. HORNBOKEN.....	Marquette
ALGER.....				
MASON.....				
MECOSTA.....	E. G. GRAY.....	Ludington.....	CHAS. A. PAUKSTIS.....	Fountain
MENOMINEE.....	JAMES B. CAMPBELL.....	Big Rapids.....	J. L. BURKART.....	Big Rapids
MIDLAND.....	ED. SAWBRIDGE.....	Stephenson.....	W. S. JONES.....	Menominee
MONROE.....	J. H. SHERK.....	Midland.....	E. J. DOUGHER.....	Midland
MUSKEGON.....	W. F. ACKER.....	Monroe.....	FLORENCE AMES.....	Monroe
NEWAYGO.....	V. S. LAURIN.....	Muskegon.....	F. W. GARDER, JR.....	Muskegon
NORTHERN MICH. MEDICAL SOCIETY.....	O. D. STRYKER.....	Fremont.....	W. H. BARNUM.....	Fremont
ANTRIM.....	FRALEY McMILLAN.....	Charlevoix.....	ERVIN J. BRENNER.....	East Jordan
CHARLEVOIX.....				
EMMETT.....				
CHEBOYGAN.....	FRANK A. MERCER.....	Pontiac.....	C. G. BURKE.....	Pontiac
OAKLAND.....				
OCEANA.....				
O. M. C. O. R. O.	N. W. HEYSETT.....	Hart.....	M. G. WOOD.....	Hart
OTSEGO.....	RUEY O. FORD.....	Gaylord.....	C. G. CLIPPERT.....	Grayling
MONTMORENCY.....				
CRAWFORD.....				
OSCODA.....				
ROSCOMMON.....				
OGEMAW.....	J. L. BENDER.....	Mass.....	E. J. EVANS.....	Ontonagon
ONTONAGON.....	R. H. NICHOLS.....	Holland.....	W. B. BLOEMENDAL.....	Grand Haven
OTTAWA.....	A. R. ERNST.....	Saginaw.....	W. K. ANDERSON.....	Saginaw
SAGINAW.....	A. R. TUCKER.....	Manistique.....	GEORGE A. SHAW.....	Manistique
SCHOOLCRAFT.....	W. M. TAYLOR.....	Ovid.....	W. E. WARD.....	Owosso
SHIAWASSEE.....	D. J. McCOLL.....	Port Huron.....	GEORGE M. KESL.....	Port Huron
ST. CLAIR.....	L. C. WEIR.....	Three Rivers.....	R. A. SPRINGER.....	Centreville
ST. JOSEPH.....	J. F. GRUBER.....	Cadillac.....	J. F. CARROW.....	Cadillac
WEXFORD.....				
WEXFORD.....				
KALKASKA.....				
MISSAUKEE.....				
OSCEOLA.....	O. G. JOHNSON.....	Mayville.....	LLOYD L. SAVAGE.....	Caro
TUSCOLA.....	W. S. RAMSEY.....	Ann Arbor.....	JOHN FOPEANO.....	Ann Arbor
WASHTENAW.....	WM. J. CASSIDY.....	Detroit.....	C. BRUNK.....	Detroit
WAYNE.....				

THE JOURNAL

OF THE

Michigan State Medical Society

ISSUED MONTHLY UNDER THE DIRECTION OF THE COUNCIL

VOL. XXXIII

JULY, 1934

No. 7

DEPARTMENT OF SOCIETY ACTIVITY

ARTICLE 2—PURPOSE

Section 1. The purposes of this Society are to promote the science and art of medicine, the protection of public health and the betterment of the Medical Profession; and to unite with similar organizations in other States and Territories of the United States to form the American Medical Association.

THIS DEPARTMENT

Under instructions of the Publication Committee this department is advanced to the first part of the JOURNAL, the purpose being to bring into greater prominence the activities of the Society and to draw to the members' attention that which their Society is accomplishing in their behalf. In doing so it is hoped that greater interest will be aroused and coöperative support increased.

There is much discussion in medical circles. Numerous proposals are being advanced. It is purposed to print some of the comments published in other State Journals in order to impart the positions that are being assumed. It is hoped that members will be kept abreast of the economic problems that are being presented through these comments and editorial expressions.

A. M. A. ACTION ON MEDICO-ECONOMICS

Two executive sessions of the A. M. A. House of Delegates in Cleveland were devoted to a general discussion of medical evices. At the close of the first session the Speaker was directed to appoint a special committee to formulate the Association's

policies. At the second session the committee, composed of N. B. Van Etten of New York, J. N. Henry of Philadelphia, G. A. Blumer of Connecticut, F. S. Crockett of Indiana, C. A. Dukes of California, E. H. Cary of Texas and McLain Rogers of Oklahoma, brought in the following report, which was adopted:

REPORT OF SPECIAL REFERENCE COMMITTEE OF AMERICAN MEDICAL ASSOCIATION HOUSE OF DELEGATES ON MEDICO-ECONOMICS

To the House of Delegates:

1. The following resolution was submitted by delegates of the Michigan State Medical Society:

WHEREAS, there is substantial evidence that powerful forces and agencies are working toward the development of health insurance in the United States; and

WHEREAS, During the course of its studies of medical economic problems, the Michigan State Medical Society, after a conference with officials of the American Medical Association, found it necessary to send a commission to England to inquire into the subject of health insurance; and

WHEREAS, The commission presented the following report which has been printed in full in the Journal of the Michigan State Medical Society and placed in printed form in the hands of all of the delegates of this House.

WHEREAS, The report of the commission raises certain grave questions concerning the policy of the officials of the American Medical Association toward health insurance and the effects of this policy on the practicing membership of the American Medical Association; and

WHEREAS, The report of the commission was transmitted to the Board of Trustees of the American Medical Association through the chairman in February, 1934; and

WHEREAS, The Michigan State Medical Society has received no word nor has it any other evidence that the Board of Trustees of the American Medical Association has considered or acted on the report transmitted in February, 1934; therefore be it

RESOLVED, That in order to avert a repetition in the United States of the disastrous consequences that attended the adoption of health insurance in England, the Speaker of the House of Delegates of the American Medical Association

appoint a committee to investigate and consider the policy of the Association toward health insurance and present a report to the House of Delegates.

2. Your reference committee has reviewed with painstaking interest the report of the procedures of the commission of the Michigan State Medical Society—commends the efforts of the commission to study and digest an important social operation concerned with medical service in England—applauds the sanity of its conclusions and its recorded opposition to the introduction into the United States of any system of health insurance now existing in Europe—because no system conforms at present with all of the policies adopted by the Michigan House of Delegates in July, 1933—namely

- "1. Free choice of physician by the insured.
2. Limitation of benefits to those of medical service.
3. The control of medical service benefits by the profession.
4. The exclusion of individuals or organizations that might engage in health insurance for profit."

3. Your committee believe that their principles are basically sound and that they should be included within any further study of medical service to be adopted as the policy of organized medicine.

4. Your committee regrets the criticisms of policy and sincerity of officials of the American Medical Association and the publicity given to them, and finds that it was due to a misunderstanding regarding information which failed to reach the delegates from Michigan. This relates to the efforts of the Board of Trustees, the Bureau of Economics, the secretary and the editor to continuously study all forms of social experiment affecting the practice of medicine.

5. Your committee believes in the sincerity of the officials of the American Medical Association in promoting free access of any member of the association to all of the files and completed records in which he may be interested.

6. The Chairman of the Board of Trustees presented the following statement at an earlier session of the House:

Since 1912, when the British Government, through the action initiated by Lloyd George, established a system of compulsory health insurance, this problem has been prominently before the House of Delegates and other official bodies of the American Medical Association. As early as 1916, the House of Delegates requested the Board of Trustees to undertake an investigation of social insurance in all its forms and to make suitable report to the House. The subject has been raised from time to time since that date. On every occasion on which the House of Delegates has officially considered the questions of compulsory health insurance and social insurance, as well as the entrance of the state into medical practice, it has reaffirmed the independence of medicine as a profession and it has always condemned any system whereby the state would in any way enter into the practice of medicine. In 1920, following the report of the committee appointed to study compulsory health insurance, the House of Delegates adopted a resolution strongly condemning all forms of compulsory health insurance.[†] It is a well known fact that voluntary insurance has always been the forerunner of compulsory insurance, and even the most ardent advocates of voluntary insurance admit that fact. The action of that House of Delegates has not been rescinded by any subsequent action taken by the House of Delegates.

As far as state medicine is concerned, the House of Delegates in 1921 adopted a resolution approving and endorsing all activities and policies of the states directed to the prevention of disease, but opposing the state treatment of disease except for the delinquent and the defective.[‡] Again in 1922, the Association declared its opposition to all forms of state medicine because of the ultimate harm that would come thereby to the public weal through such form of medical practice.

The Judicial Council of the Association has repeatedly brought reports to this House of Delegates sustaining the same point of view, and all these reports of the Judicial

Council have been accepted and approved by the House of Delegates.

Finally, last year the House of Delegates unanimously approved in principle the Minority Report of the Committee on the Costs of Medical Care, and urged that the Board of Trustees of the American Medical Association in cooperation with its constituent bodies conduct an intensive campaign to disseminate this point of view among the medical profession and the public, with a view to the maintenance of high ethical standards and the preservation of professional ideals.

Your Board of Trustees, your executives and all of the publications of this Association have done their utmost thus far to carry out the policies which you have established. Today we are confronted with an extraordinary situation of the utmost importance to the health and welfare of the American people and to the American Medical profession. It is no secret that a considerable number of foreign nations have already established state systems of medical care and that an intensive campaign has been carried on in this country for many years, led by philanthropists, social workers, economists and various foundations, to cause the American Medical profession and the American people to accept a similar type of medical practice. In accordance with the mandate of this House of Delegates, all of the facilities of the American Medical Association have been used to oppose this trend and the propaganda in support of it, which has been widely circulated and for which vast sums of money have been, and are being, expended by various interested parties. It is also now well-known that the President of the United States, in a recent message, has come forth for the principle of social insurance, with special reference to old age pensions and unemployment insurance.

In 1930, the House of Delegates recommended to the Board of Trustees the establishment of a bureau of Medical Economics in the headquarters office for the study of all of these problems as they affect the medical profession. From time to time this Bureau has issued bulletins of the greatest importance, not only for the factual data which they present, but also for the interpretation of medical economic trends. In accordance with a special request by the Board of Trustees, your Bureau of Medical Economics has prepared an extended statement of the conditions in relationship to state medicine and compulsory insurance, as they exist in other nations. This statement was made available to all Fellows of the American Medical Association by publication in the Bulletin of the Association for April, 1934. In connection with the publication of this data and this critical analysis, the Bureau of Medical Economics has also drawn up a statement entitled "Sickness Insurance Problems in the United States" which includes a presentation of twelve basic principles which should be given most careful study in relationship to any recommendations that this House may care to make on this problem for the future. This statement will now be distributed to the House of Delegates.

There are manifestations of unrest in relationship to the economic situation among some of the component and constituent bodies of this Association. On several occasions communications have been made to the Board of Trustees and to the headquarters office, urging a change in the activities of the organization which would in effect demand a departure from the policies set down by this House of Delegates during the past eighteen years. The problem is before you. The opportunity is offered here this afternoon for an extensive discussion of the situation as it confronts the medical profession today. The Board of Trustees hopes that you will give it earnest and careful consideration. Only the House of Delegates has the power to define the policies which are to guide this association in the coming years.

7. Your committee believes that this statement of the chairman of the Board of Trustees briefly reviewing the history of the action of the House of Delegates during the past eighteen years sufficiently illuminates the sincere and deep concern of the American Medical Association regarding all social programs affecting the delivery of medical service.

8. The delegates have in their hands a pamphlet entitled "Sickness Insurance Problems in the United States" as presented by the Board of Trustees.

9. Your committee does not recommend any plan but has abstracted from the pamphlet the following principles and suggests that they be followed by all constituent bodies of the American Medical Association as bases for the conduct of any social experiments which may be contemplated by them.*

[†]Index and Digest, Official Actions of American Medical Association, p. 53.

[‡]Index and Digest, Official Actions of American Medical Association, p. 175.

*Italics ours.

10. First: All features of medical service in any method of medical practice should be under the control of the medical profession. No other body or individual is legally or educationally equipped to exercise such control.

Second: No third party must be permitted to come between the patient and his physician in any medical relation. All responsibility for the character of medical service must be borne by the profession.

Third: Patients must have absolute freedom to choose a duly qualified doctor of medicine who will service them from among all those qualified to practice and who are willing to give service.

Fourth: The method of giving the service must retain a permanent, confidential relation between the patient and a "family physician." This relation must be the fundamental and dominating feature of any system.

Fifth: All medical phases of all institutions involved in the medical service should be under professional control, being understood that hospital service and medical service should be considered separately. These institutions are but expansions of the equipment of the physician. He is the only one whom the laws of all nations recognize as competent to use them in the delivery of service. The medical profession alone can determine the adequacy and character of such institutions. Their value depends on their operation according to medical standards.

Sixth: However, the cost of medical service may be distributed, the immediate cost should be borne by the patient if able to pay at the time the service is rendered.

Seventh: Medical service must have no connection with any cash benefits.

Eighth: Any form of medical service should include within its scope all qualified physicians of the locality covered by its operation who wish to give service under the conditions established.

Ninth: Systems for the relief of low income classes should be limited strictly to those below the "comfort level" standard of incomes.

Tenth: There should be no restrictions on treatment or prescribing not formulated and enforced by the organized medical profession.

11. If it is determined in a community that some experiment to change or improve the method of administering medical service is desirable, observance of these principles will remove many of the "disturbing influences" from such an experiment. In all such experiments, attention must be sharply focused on the quality of medical service.

12. Such restrictions will undoubtedly lower the enthusiasm of many of the present advocates of such schemes. They remove the interest of the politician, the commercial promoter and all those who consciously or unconsciously are seeking to achieve other objectives than better medical care for those unable to provide such care for themselves under present conditions. All these principles are directed toward protecting the character of the service to be given and all are directly designed to guard against abuses which experience shows are bound to arise when these principles are neglected. In most communities it will be found that comparatively few changes in methods of administering medical care will be necessary. That type of medical practice which preserves the personal relationships between physician and patient, that maintains the practice of medicine as a profession, and that has withstood the test of centuries must be preserved for the best interests of both the public and the medical profession.

MUTUAL HEALTH SERVICES

In the June JOURNAL there were published the comments of three members from Oakland County. Members were requested to send in their comments and opinions for the guidance of the Committee on Economics. These are being published for the information of members.

The following comments have been received. Members are again requested to send in their comments for publication in the August issue.

FROM EX-PRESIDENT J. B. JACKSON

I have your letter of May 23d, asking for any comments which I might wish to make on the proposed plan for Mutual Health Services. As you already know, I am in favor of making an attempt to put in operation some plan of this sort. I think that the present economic situation makes it obligatory on the medical profession to devise some plan, which may make available to the public who needs it; the services which the profession is in a position to render. I am decidedly in favor of this effort being made by the medical profession primarily rather than to have it forced upon us by those who do not understand the situation as we do.

So far as any comment on the plan proposed in the May JOURNAL is concerned, I am rather reticent about making any criticism; for the committee who has given so much time and thought to the subject are in a much better position to suggest plans than I am. There are two things, however, which occur to me. One is the difficulty in selling this plan to wage earners with limited income. I think it is going to be extremely difficult making such people voluntarily assume so large an obligation for health insurance.

I should also like to add that I think it is of the greatest importance to sell this plan to the medical profession. In my contact with the profession, I am convinced that the great majority of the profession are disposed to be timid about any new plan of medical economics and are inclined to continue to carry on medical practice as it always has been done in the past.

Yours very sincerely,
JOHN B. JACKSON.

FROM BAY COUNTY

The Bay County Medical Society met and discussed "Mutual Health Service," Wednesday evening, May 9. Many interesting discussions and questions arose. As a result the members were urged to more carefully review the supplement concerning the subject and were requested to file with the secretary of this society any questions they chose to have answered. A special greeting of the society will be called later to discuss the subject further and at that time the society's stand will be taken.

Fraternally yours,
L. FERNALD FOSTER, *Secretary*.

FROM W. C. ELLET, M.D.

Before stating our position, please bear in mind that these are our ideas, and while they have been explained, and been accepted by the Berrien County Medical Society, on the other hand we admit that we have not attempted to make out a good case for Mutual Health Insurance, their information being

that of common knowledge and the report of the special meeting in Flint, copies of which they received. In other words we have followed out the same plan as the State Committee, expressing only those points favorable to our preconceived ideas, and not presenting both sides of the story or all the probable things that might happen. We might add that nearly four years ago we heard this present plan presented by one of the committee, before even the National Committee on the Cost of Medical Care presented their report, and before any state or English statistics were gathered. We admit that statistics help a lot in arriving at conclusions, but we feel that if the State Committee had honestly gone out for impartial statistics as a solution to a problem, just as many figures would be presented in opposition to their plan.

We appreciate the Luce-Sinai report of their English trip, but we cannot understand why there were not at least a few more minor objections to the Insurance problem, as it is almost impossible for us in this day and age to conceive of any idea, or plan in operation, that does not have plenty of objectors, especially in the field of social welfare. Their report, to us, has all the earmarks of a "Wickersham Report." It has failed but let us keep on with the noble experiment. To quote their opening remarks, "As a result the conclusion has been reached that no system of health insurance now in existence completely conforms to the policies set forth." (Policies those of, free choice of physician, limitation of benefits to medical service, exclusion of individuals or organizations that might engage in health insurance for profit.) "Therefore the committee records its opposition to the introduction of any of the present systems to the United States."

Now let us suggest why other insurance plans do not include these policies, and not be "patting" ourselves on the back that we have thought of policies that other plans have neglected.

In the first place, Choice of Physician—We maintain that the employee under Mutual Health Service does not have free choice. Sec. 9, a, b, and c, limit him. Particularly he cannot have a physician who does not signify his intention of providing service according to the Mutual plan. Then, too, let us face an unpleasant fact. Commercial companies have found to their sorrow that there are many "chiselers" among our colleagues, and when the local committees start to discipline this group, an unpleasant time will be had by all.

Limitation of Benefits to Medical Services.—Of course, the taking away of compensation for illness will aid such a plan, but then what have you to sell such an individual? The state now provides by statute medical care when ill and indigent, so why should he pay premiums for protection that he already has, and if he can afford to buy Mutual Service Insurance, he is foolish if he does not add a few dollars more and buy health insurance from commercial companies that will protect his family when he is sick. The thinking man wants to protect his family when ill and keep off the welfare. The cost of medical care in the average family is small compared to the loss of wages from illness.

Exclusion of Individuals or Organizations that Might Engage in Health Insurance for Profit.—What right has the medical profession to enter another field of business and ask for an exclusive franchise in addition to their license to practice? Do you think that commercial insurance companies will idly stand by while such legislation is being enacted? What colossal crust for the profession to even ask or suggest such a proposition.

Is it not obvious why insurance groups have not included these above policies in their plans?

Truly the committee are seers and prophets of

the highest order when they state, "Such a plan *must come about eventually and, therefore, we must endorse and accept this plan.*"

We maintain that half the social strife in the world today is due to radical theorists taking advantage of the unrest of ignorant individuals, and constantly talking revolution and overturning of established principles. Will someone tell us why the world must be revolutionized in the next few months, and why must the medical profession become "Brain Trusters" and revolutionaries instead of evolutionaries? Perhaps things are all wrong but the pendulum follows physical laws and always returns to the right, unless someone stops the works.

Which would be a greater catastrophe, to blunder into an insurance or panel form of practice (one cannot cover up the plan by the title "Mutual Health Service") brought about by our fear and greed of economic conditions, or to have a form of state medicine thrust upon us? One cannot deny the danger of political involvement in the insurance plan, and if the latter (state medicine) should come true, it would be in such a form that the cost would be equitably distributed and profits not destroyed by political grafters or competitive companies. True, state medicine does not contemplate any too free choice of physician but it does fulfill the other two requirements of mutual service, *viz.*, limitation of benefits and limitation of competition.

Let us get down to specific facts in regard to this health insurance plan.

The medical profession resents the encroachment of lay groups in the practice of medicine and have consistently fought such invasion, yet here we are making plans to encroach on the established business of lay groups, because the other fellow's pasture appears greener, and call it what you may the motive behind this plan is fear and greed. Why not ask for volunteers among the profession to give up their practice and go into the insurance business and leave the field free for the remainder. To our mind this is just as logical a solution as putting us all in the insurance business and dividing the profits.

Hospitals, group clinics, corporations and contract medicine have come in for a great deal of criticism by the profession for entering the active field of medicine. They May STATE JOURNAL in the editorial section says, "Beware of Group Hospital Insurance Plans." "The plan of Mutual Health Services, published in this issue, provides for hospital, dental and medical services." They left out nursing and control of the pharmacists. It would not be surprising for the hospital journals to come with a similar editorial, Beware of the Medics! They want to seize control of the hospitals, nurses, dentists and pharmacists; of course their plan is masked under the title of mutual benefit, but it is as clear as the nose on your face that the doctors are hungry and wish to control our business as well as their own. If we don't subscribe to their plans they will take the business away from us and give it to other institutions. Fight the medical trust. Arise, all you nurses, dentists, druggists, patients and directors of our institutions less you be destroyed by these demons. This is not far fetched; to our mind it is likely to happen in retaliation, and if I were on the other side of the fence, I know I would feel the same.

State medicine has been repeatedly condemned as stopping advancement in science and giving poor service to society. When mutual health insurance comes into practice the panel doctor will lose his incentive to advance the art of medicine, as if he will take advantage of the post-graduate work, what a pitiful altruistic sop to throw him, and we grieve for the service the poor premium payer will receive when he cannot demand the services he wishes.

Mutual health plans have been tried by fraterni-

ties and communities with great financial loss, even though held in check by oaths of brotherhood, fealty and tight contract prices with the doctors, and very few of these have ever agreed to pay the insured enough sick benefit or compensation to make malingerer worth while. Ideally theoretic but practically failures.

Mutual health service as proposed is distinctly class legislation. Keep the wealthy out, so we can hook them more, and put in the lower wage bracket class those whom we have to serve on credit, when they are out of work. Where has the vaunted charity and goodness of medical practice gone?

Industry at the present time has its back to the wall and has stood aloof that it can bear as far as unionism and the "check off" system is concerned, and yet the success of mutual health insurance is dependent upon the coöperation of industry in the "check off" premium. We freely predict a finish fight in this battle, and the medical profession will have enough to do taking care of their own business. When they become involved with these two groups it is easy to see they will be bruised and battered in the scrap.

Let us not be washed away in the maelstrom of social reform that is flooding the nation, or be enmeshed in the net of restrictions that labor and industry are now fighting because they experimented with plans. Let us retain the individualism of our profession and think of the future generations of physicians who will be involved and trapped by actions that we may take.

Careful analysis of the report of the Economics Committee published last summer shows the physician to be much better off than other groups, and lastly, if each of us practice the art of our science and conscientiously give our best service we will be remunerated accordingly. The science and social experience in the practice of medicine proves to us that not all are created equal, and all of us cannot be at the top in professional and commercial success.

Let us keep our feet on the ground. Let us have our own opportunity of individual success. It is too bad if some of us fall by the wayside, but we took that chance when we started the hard road to a medical education. Let us stick together for common good, but let us not as a body destroy individualism, in the responsibility of the patient, and in the practice of medicine.

Sincerely,

W. C. ELLET, M.D.

FROM A. V. WENGER, M.D.

In view of my efforts in favor of the adoption of the report of the committee on medical economics, my comments are perhaps a bit superfluous.

While not active on the floor, I contacted many delegates who were lukewarm, and not a few who were directly opposed to the plan. After considerable discussion it developed that the attitude of indifference or opposition was in most cases based on a misconception of one or more of its provisions.

In view of these discussions I came to the conclusion that we would have rather rough going to secure approval of the plan in the House of Delegates. It was with some surprise and no little satisfaction that I heard the roll call approving the plan 61 to 9.

The only suggestive comment I have to make follows:

Re Allotment of funds:

If post-graduate work is to be available to general practitioners and specialists alike, I should suggest that the 2 per cent deduction be made from the specialists' allotment also. As provided in the report

it is deducted from the general practitioners of medicine and dentists allotments only.

Sincerely yours,

A. V. WENGER, M.D.

FROM EX-PRESIDENT H. E. RANDALL

I have been pondering Mutual Health service since Dr. Alexander Lambert made his report to the delegates of the A. M. A. many years ago. Was convinced then as I am now that since a certain portion of our population are unable either by mental, physical or economic conditions to be self supporting in the old sense of "rugged individualism" that some system of help is necessary both to the doctor and to the families he may serve.

We all realize we are in a world that has changed amazingly in the years since 1890 when land could be had for the asking from a generous government. Raising the standard of living and the strife of modern competition, combined with higher taxation of land and homes, has closed the doors to many opportunities. It has seemed only too clear that America must in time follow the experience of the older European nations, in providing some form of social medicine. Not because we want it, but because we are "faced not by a theory but by facts."

In every system proposed there are certain inherent defects both from the standpoint of physician and the patient, professional and ethical and the assurance of proper care.

The defects of various European systems have been studied and are well known. An attempt has been made by our committee to avoid these mistakes and to offer a plan which, while not perfect, yet has been a sincere attempt to avoid the defects of previous systems of social health insurance.

H. E. RANDALL, M.D.

FROM R. H. HOLMES, M.D.

I have given this matter of Health Insurance considerable attention, which course I believe should be followed by every member of the State Medical Society.

I have been fortunate (or unfortunate) in having had some experience with sickness insurance, both from the administrative part and the medical side, which makes me, as a physician, primarily opposed to this type of service. Each and every organization of this character is made use of by some for political self-aggrandizement. In every organization of this kind, the trend is to place the doctor in a position of a professional employee rather than an independent practitioner. I believe it is impossible to prevent, no matter how carefully the organization is made, to protect the relation between the doctor and his patient and not have a third party, even though it may be a commission of physicians. These are the main objections I have to this proposition as a whole.

I would like to list my objections to the plan as presented.

First—Fixing the upper income limit at \$1,500 will make eligible approximately 90 per cent of the people in this community.

Second—I do not understand in what way Mr. Sinai and the committee feel that the medical profession would have control of this plan by a total of three members on a board of eleven. It is possible that the doctor of dental surgery and the registered nurse would look at this matter from the same position as the doctors of medicine. It is inconceivable that the pharmacist or the hospital superintendent would be partial to the medical profession. The growing tendency of the hospital superintendents to believe that the staff should work for the hospital and not the hospital for the staff is to me sufficient evidence. Certainly the other four members will not be in sympathy with the medical prob-

lem in regard to sections D and E of Article 3, and in particular, fees for physicians and investments of funds.

I have no complaint with Articles Four and Five.

Article Six—We have another situation in which the judicial body gives even less percentage of power to the medical profession.

Article Eight—Demonstrates conclusively the political angle of the board of governors and the lack of control by the medical profession.

Article Nine—Splendidly organized article, but provides absolutely no guarantee to the medical profession that restrictions may not be added by the board of governors.

Articles Ten, Eleven, and Twelve—Satisfactory.

Article Fifteen—I believe the average worker in this salary limit, and we must remember that the average is closer to \$1,000 a year than to \$1,500, would be unable to afford to pay the schedule rate for an average family, that is three children and two adults. The industrial men with whom I have conferred would not be interested in this plan unless it was made compulsory. The cost of collecting this amount under a voluntary system would in my opinion take more than the 13½ per cent allowed for administration and surplus.

Article Nineteen—Referring to the comment, I feel that the argument is a fallacy.

Article Twenty—Leaves a decided loop hole in satisfactory management.

Article Twenty-two—Allots this fund to the board of governors comprised mainly of non-professional people who are to dictate "with the advice of the state medical and dental societies" how professional men are to be given post graduate training.

The *American Medical Association Bulletin* has covered rather completely the general objections to these plans.

I believe it will be impossible to keep this program isolated from non-employment insurance.

I believe this plan is instigated as part of the program of certain sociologists and industrialists who resent the rugged individualism and continued independence of the medical profession. Those practitioners in Detroit and other large centers have found to their amazement and disappointment and loss of self-respect, the relationship they now bear to the hospital since the occasion of the Afflicted Childrens Act.

This program is offered as an experiment. A number of delegates voted for it because they felt that if any county wanted to try this out, they should be allowed to do so, forgetting at the time that each county's problem and reaction to it is reflected on all other counties. Witness acceptance of the Couzens Fund program.

I must state that this proposition has not been offered the society I represent, and these are my personal opinions. However, I do believe that the general attitude of our society is against the practice of Mutual Health Service.

Very truly yours,

ROY HERBERT HOLMES, M.D.

FROM EX-PRESIDENT A. P. BIDDLE

In reply to your letter of the 23rd instant relative to comments and suggestions on the proposed plan for Mutual Health Services, I would state that my views are well known to the Committee on Economics and, further, I feel that, as I am member of the House of Delegates and shall have to pass upon the recommendations of the Committee, it were better that no further comment or suggestion be made by me at present.

Sincerely,

ANDREW P. BIDDLE.

A PRACTICAL ALTERNATIVE TO STATE MEDICINE

The Michigan State Medical Society has taken a revolutionary step by its decision of April 12, 1934, endorsing the idea of experimentation with a voluntary health insurance plan. It marks the beginning of a new epoch in the history of American medical socio-economics. It is the first blow to the stand-patters of the status quo. It brings us right into the realm of socialized health service with its historical climax of state medicine.

On April 12, a special meeting was held to study a plan known as "Mutual Health Service." The much misunderstood term "insurance" is not used for practical reasons. After considerable debate and thorough discussion, the Michigan Society went on record favoring the principle of insurance to distribute cost of health service. Considering contemporary medical economic thought and the combative attitude of medicine and dentistry toward the mildest form of socialization of health services, we must view the present Michigan step—a reversal of its position three years ago—as epoch making. This action is motivated by that noble idealism expressed in the Michigan Society elaborate Health Survey of 1933.

"Ever since the English Poor Law of 1601 the right to live has been guaranteed in all civilized countries. The right to live implies more than the mere necessities of life. Adequate medical service must be distributed to the entire population. It would be manifestly unjust to deny any citizen relief from incapacitating illness."

In substance, the Michigan experiment is a voluntary health insurance plan in which the health profession, the industries and wage earners participate. The details of plan are given elsewhere. The question we now raise is whether the Michigan proposal is a practical alternative to state medicine where health services are distributed free to the entire population.

What is state medicine? State medicine is a tax-supported system of social insurance where the people receive free medical and dental care and physicians and dentists are employed in clinics by the state on a salary basis. In Soviet Russia we find a typical example of a state system. Will the Michigan voluntary plan fulfill in theory and in practice the public need of universal and adequate health care? If universality is our objective, some believe a system of state medicine is more practical.

The issue is so vital that professional groups are organized advocating the state system for immediate adoption. Since a change is needed, they contend common sense would suggest a change to state medicine. The whole medical picture takes on new form. Shall we choose either extreme—voluntary insurance or state medicine—or shall we choose a compromise plan somewhere between these two extremes?

If state medicine is not feasible, is the Michigan plan a practical alternative? It is certainly the only concrete, flexible and carefully thought-out proposal so far formulated on a state-wide basis. It embodies the desirable control features by the medical professions, it keeps out of the administration lay and commercial groups and politicians and enables labor and industry to show their real and sincere interest in the people's health. Above all, it gives for the first time in American medical history physicians and dentists an opportunity to gain experience in handling the health problem of the nation on a cooperative and mutually protective basis.

One thing is certain, that we are not so near a final solution of the distribution problem as we think we are. The time is ripe to unite and consolidate the leadership of the medical professions—medicine and dentistry—in order to crystallize a common-sense and practical viewpoint for the pro-

tection of the professions and the people. Society and the professions need protection against possible exploitation by an ill conceived system of insurance practice. Whatever the imperfections of the Michigan plan may be, it points to the need of adopting an aggressive policy, preparing safety devices against the establishment of commercialized insurance which may take advantage of the disorganized professions. Whether the principle of insurance or taxation or both are embodied in future plans, we must be guided by general policies and principles to safeguard the interests of the public and the professions.

Let us not merely watch the Michigan experimental plan or other plans but let us gain experience with a mutualized form of health service of our own making by early initiation and speedy action.

Editorial in the June *Dental Outlook*.

A. J. A.

More than 600 requests have been received for copies of the May JOURNAL supplement which contained the proposed plan for Mutual Health Services. The copies were sent without comment. The following are a few of the voluntary expressions that have been received. Extracts are being presented for our members' information. Comments are appearing in various medical and lay publications. An endeavor is being made to compile them. Over 6,089 inches of newspaper space in the state has been devoted to presentation and discussion of the plan. About twenty-seven editorials have appeared in the lay press. They are all on file in a scrap book for reference and record.

A. W. Freeman, M.D.,
The Johns Hopkins University,
615 North Wolfe Street,
Baltimore, Md.

"May I congratulate you on the fact that Michigan, under your leadership, is viewing the subject of the future of medical service realistically and rationally. I am tremendously concerned for fear the present leadership of the profession in this country will succeed in delaying any satisfactory solution of the problem so long that commercial organizations to supply medical service will be enabled to get a foothold. This seems to me to be the worst thing which could possibly happen, and it is a pleasure to see that one state, at least, is determined that it shall not happen."

H. E. Friesell, Dean,
University of Pittsburgh,
School of Dentistry,
Pittsburgh, Pa.

"I wish to compliment the Michigan State Medical Society on the thorough and intelligent manner in which it has been studying the question of Mutual Health Service.

"Your Society has done and is doing a splendid work and a very much needed one on this subject."

Graham L. Davis, Director,
The Duke Endowment,
Power Bldg.,
Charlotte, N. Carolina.

"I requested recently and you sent me three copies of the Supplement to the Journal of the Michigan

State Medical Society for May on the subject of Mutual Health Service. When I produced this at the recent meeting of the members of the Committee on Group Hospitalization of the North Carolina Hospital Association, they all wanted copies, but I did not have enough to go around."

A. C. Christie, M.D.,
1835 Eye St. N. W.,
Washington, D. C.

"I have studied the Report of the Committee on Survey of Medical Services and Health Agencies of your Society with the greatest interest. It is a most thorough and excellent report and will undoubtedly be of great value to other localities."

George Crownhart, Secretary,
The State Medical Society of Wisconsin,
Madison, Wisconsin.

"I would be less than frank, if I did not say that none of our studies made to date in Wisconsin, nor our investigations of plans elsewhere, indicate to us an attack on the problem along the lines that you in Michigan have outlined. I would not have you think for a moment that we are so presumptuous as to say that we are right about this matter, but rather that we have yet to be convinced that the gains to be had will offset the losses, using both the word 'gain' and the word 'loss' from the viewpoint of the service that the public does or will obtain. You may be certain that we are studying your plan with the greatest of interest even though we feel that, as Mr. Kingsbury admitted, every voluntary scheme is merely a bridge to a compulsory scheme."

Rodney A. Yoell, M.D.,
14 7th Avenue,
San Francisco, Calif.
Telegram:

"Just read Supplement of Michigan Journal of Mutual Health insurance proceedings at House of Delegates stop Magnificent piece of work stop We in California have just done same thing at State Convention Riverside feel your action regarding American Medical Association correct one hundred percent will write letter asking further information please send collect three copies of Supplement giving Delegates proceedings four nine naught Post Street San Francisco"

Walter P. Bowers, M.D.,
Managing Editor,
The New England Journal of Medicine,
8 The Fenway,
Boston, Mass.

"The action of your House of Delegates is of great interest and should be studied by the other State Medical Societies for it seems to me to be a logical step toward meeting the problems now confronting this country."

P. H. Van Itallie,
Technical Editor,
Drug Topics,
330 West 42nd Street,
New York, N. Y.

"According to a paper which was recently published in the Business Week, a mutual health service plan whereby Michigan wage earners and their families would receive complete medical care of \$27 per person annually, was recently approved tentatively by the Michigan State Medical Association House of Delegates.

"Because this plan proposes a central fund from which payments would be made to the various divi-

sions of health service, including drug distributors, we would very much be interested in receiving further information on this subject.

"As you probably know, DRUG TOPICS is the national weekly newspaper for retail druggists. It is in this publication that we wish to comment on the plan proposed by this Association."

Dr. J. Newton Hunsberger,
514 West Main Street,
Norristown, Pa.

"I noticed in Dr. Olin West's report that the Trustees of American Medical Association took no notice of your State's report of conditions in England regarding contract practice. Many of our men think this State Medicine would be a good thing for this country and the belief is growing fast. We are our own menace."

MEDICAL HISTORY

There remain on hand a number of sets—two volumes each—of the *History of the Michigan State Medical Society*, compiled by the late C. B. Burr, M.D. The reviewers have commended this historical record of our Society. A set should be in every member's library.

As long as they last you can obtain these two volumes upon receipt of your remittance of Five Dollars—half price. Send in your orders to the State Secretary.

SURVEY REPORT

Upon remittance of \$1.50 you can secure a copy of the report on the Survey of State Health Agencies and Medical Services. This report should be read by every member. Send for a copy today.

ANNUAL MEETING

Our annual meeting will be held in the W. K. Kellogg auditorium in Battle Creek on September 11, 12 and 13. The August JOURNAL will contain the preliminary program announcements. The complete program will appear in the September issue. Please note the dates and plan to attend what promises to be a most instructive and enjoyable meeting. Battle Creek members propose to be most royal hosts.

PLAN FOR MUTUAL HEALTH SERVICES

Shortly after the issuance of the May JOURNAL and the publication in the *Journal of the A. M. A.* of the resolution Michigan delegates were instructed to introduce at the Cleveland A. M. A. meeting inquiries and requests commenced to come in for copies

of the proposed plan for Mutual Health Services and the Luce-Sinai report. These inquiries came from all over the country and have now passed the 600 mark.

THE PENALTY OF LEADERSHIP

The following literary gem was originally written, we are told, as an advertisement for The Cadillac Motor Car Co. It contains a truth which applies to the physician, druggist or manufacturer, hence we reprint it here for our readers.—Editor's Note.

"In every field of human endeavor, he that is first must perpetually live in the white light of publicity. Whether the leadership be vested in a man or in a manufactured product, emulation and envy are ever at work. In art, in literature, in music, in industry, the reward and the punishment are always the same. The reward is widespread recognition; the punishment, fierce denial and detraction. When a man's work becomes a standard for the whole world, it also becomes a target for the shafts of the envious few. If his work be merely mediocre, he will be left severely alone—if he achieve a masterpiece, it will set a million tongues a-wagging.

"Jealousy does not protrude its forked tongue at the artist who produces a commonplace painting. Whatsoever you write, or paint, or play, or sing, or build, no one will strive to surpass or to slander you, unless your work be stamped with the seal of genius. Long, long after a great work or a good work has been done, those who are disappointed or envious continue to cry out that it cannot be done. Spiteful little voices in the domain of art were raised against our own Whistler as a mountebank, long after the big world had acclaimed him its greatest artistic genius. Multitudes flocked to Bayreuth to worship at the musical shrine of Wagner, while the little group of those whom he had dethroned and displaced argued angrily that he was no musician at all. The little world continued to protest that Fulton could never build a steamboat, while the big world flocked to the river banks to see his boat steam by.

"The leader is assailed because he is a leader, and the effort to equal him is merely added proof of that leadership. Failing to equal or to excel, the follower seeks to depreciate and to destroy—but only confirms once more the superiority of that which he strives to supplant.

"There is nothing new in this. It is as old

as the world and as old as the human passions—envy, fear, greed, ambition, and the desire to surpass. And it all avails nothing. If the leader truly leads, he remains—the leader. Master-poet, master-painter, master-workman, each in his turn is assailed, and each holds his laurels through the ages.

“That which is good or great makes itself known, no matter how loud the clamor of denial. That which deserves to live—lives.”

STATISTICAL DATA IN HUMAN ANATOMY

From the *Journal of the A. M. A.*:

To the Editor:—In our daily newspaper (Grand Rapids Press) an item caught my eye in the section on “This Curious World.” The statement is made that “the blood vessels of an adult have a combined length of about 100,000 miles.” May I ask you whether this statement has the backing of scientific authority. For a long time I have wanted to know whether any estimates have ever been made of the combined length of nerves of the body and of the blood vessels. Also whether the total number of white and red corpuscles has ever been estimated. These figures would be of interest in talks to the public which I sometimes give. If there is any publication you recommend along this line, I will be grateful.

A. W. WOODBURN, M.D., Hastings, Mich.

ANSWER.—Estimates of the total length of blood vessels in the adult human body would necessarily be only approximate. Krogh, in his book on the capillaries, has made a calculation of the total length of blood capillaries in the muscles. He states that there are more than 100,000 kilometers of capillaries in the muscles alone (62,000 miles). Since the muscles constitute only about 40 per cent of the weight of an adult healthy body, it would be conservative to estimate the total length of all capillaries in the rest of the body at 38,000 miles. Therefore, the statement that there are more than 100,000 miles of blood capillaries seems to be conservative.

No estimates of the total length of nerve fibers in the human body seem to have been made, but several estimates have been made in their number. Vierordt estimates the number of nerve fibers in the spinal nerve trunks at over 800,000, the number of fibers in the cranial nerves from the third to the twelfth, inclusive, at 200,000 (Krause's *Anatomie*). The number of fibers in the optic nerve have recently been counted by Arey (1934); the two (right and left) together in the human adult contain about 2,600,000. This gives a total of 3,600,000 fibers without the olfactory nerves. These figures are undoubtedly far too small, because the older counts were made by methods that did not permit observation of the finer fibers. Since many of these nerve fibers branch repeatedly toward their termination, the number of fibers in the nerve trunk would be only a fraction of the total number of nerve fibers in the periphery.

The number of red corpuscles in the body has been estimated at twenty-three million million (Vierordt). The proportion of white blood cells to red cells is about 1 to 666, so that the blood contains only about thirty-three thousand million white cells.

A good reference book for statistics of this kind is Vierordt's *Anatomische, physiologische und physikalische Daten und Tabellen*, Jena, Gustav Fischer, 1906. A considerable amount of such information is contained in Harvey's *Simple Lessons in Human Anatomy*, Chicago, American Medical Association, 1931.

COUNTY SOCIETIES

BERRIEN-CASS COUNTY

The meeting was called to order by the president, Doctor Richmond, following a very interesting talk by Dr. Walter Maddock on “Peripheral Vascular Diseases.”

Dr. Richmond asked the Society to take action on the County Contract coming up next month. Drs. Mitchell and Emery moved to instruct the Public Relations Committee to deal with the Board of Supervisors next month, expressing ourselves as satisfied with the present contract. Carried.

The secretary asked the Society's wishes as to July and August meetings. It was noted that the lawyers are incorporating bar and thought that they might be able to cast some light on our problems.

Doctor Witt, after discussing the fact that we are not well posted on social changes which are inevitable, urged that we become more intelligent about these subjects before, rather than after, they occur. He asked that we have such a meeting with the lawyers, since their problems, as an allied profession, are similar to our.

The meeting was turned over to the Cass County Society for a short business meeting, in which Dr. Loupee asked that the Society come to an understanding with their Board of Supervisors. The first step should be an audit of costs. Dr. McCutcheon suggested getting figures from the county treasurer and publishing them in the county papers. Drs. Lyman and McCutcheon moved to appoint a committee of two to carry out this suggestion, covering the period of July 1, 1933, to date. Drs. Harmon and Lyman were appointed.

After thanking the speaker for his paper, the meeting was adjourned.

* * *

Dr. John E. Ames, of Niles, was elected Mayor of Niles in April. He came here six years ago to begin practice. Becoming Mayor in six years—more power to him!

EDWIN P. VARY, *Secretary-Treasurer*.

GOGEBIC COUNTY

A special dinner meeting of the Gogebic County Medical Society was held at the St. James Hotel, Ironwood, May 10, 1934, at 6:30 P. M. This meeting was called to hear a program presented by the Committee on Preventive Medicine of the Michigan State Medical Society. Twenty-four men were present. The program was as follows:

1. Differential Diagnosis in the Acute Communicable Diseases

JOHN E. GORDON, M.D., Detroit, Director, Division of Epidemiology, W. K. Kellogg Foundation

2. The Economics of Preventive Medicine

(a) The Program of the Michigan State Medical Society

L. O. GEIB, M.D., Detroit, Chairman, Committee on Preventive Medicine

(b) General Principles

HENRY F. VAUGHAN, Dr.P.H., Detroit, Member of Board, W. K. Kellogg Foundation

(c) Application to Counties

G. M. BYINGTON, M.D., Battle Creek, Associate Medical Director, W. K. Kellogg Foundation

The talks were illustrated with lantern slides.
The meeting adjourned at 10:30 P. M.
FRANK L. S. REYNOLDS, M.D., *Secretary*.

LUCE COUNTY

The Luce County Medical Society met at the Newberry State Hospital the evening of May 9, 1934.

The program for the evening was:

1. Differential Diagnosis in the Acute Communicable Diseases

JOHN E. GORDON, M.D., Detroit, Director, Division of Epidemiology, W. K. Kellogg Foundation

2. The Economics of Preventive Medicine

(a) The Program of the Michigan State Medical Society

L. O. GEIB, M.D., Detroit, Chairman, Committee on Preventive Medicine

(b) General Principles

HENRY F. VAUGHAN, Dr.P.H., Detroit, Member of Board, W. K. Kellogg Foundation

(c) Application to Counties

G. M. BYINGTON, M.D., Battle Creek, Associate Medical Director, W. K. Kellogg Foundation

Following Dr. Gordon's talk, a dinner was served in the new Receiving Unit of the Newberry State Hospital.

After partaking of a delightful dinner the Luce County Society had the remaining portion of the program.

We appreciated greatly being able to assist the Committee on Preventive Medicine of the Michigan State Medical Society in holding this regional conference, which was greatly enjoyed by everyone present.

In addition to the above mentioned men on the program, those present were: Dr. F. P. Bohn, Dr. H. E. Perry, Dr. R. E. Spinks, Dr. E. H. Campbell, Dr. C. B. Toms, Dr. Jean B. Christie, Dr. F. O. Mesiter, and Dr. George F. Swanson, of Newberry; Dr. R. A. Tucker and Dr. Gail Broberg of Manistique; Dr. G. A. Conrad, Dr. F. H. Husband, J. G. Blain, I. V. Yale, F. W. Tamblin, C. J. Ennis, F. C. Bandy, of Sault Ste. Marie; Dr. G. B. Cogger of CCC camp, Newberry; Lt. B. Frazen of CCC Camp, Rexton; Lt. A. C. Neeseman of CCC Camp, Germfask; and Major W. J. Froitzhoim and Lt. C. R. Moon, of Fort Brady, Michigan.

MUSKEGON COUNTY

PUBLIC RELATIONS COMMITTEE

The Public Relations Committee is striving to continue with their program. It might be well to remind the members of the society that while perhaps a few may feel themselves injured by some of the new plans, the ultimate result will be advantageous to all, both in furthering a better system of practice, in carrying out the unification of the medical society, better medical care of the people, and more remuneration for the doctor. If anyone feels that his rights are being wrongfully neglected, come to the business meetings of the society and interpose your objection.

INSURANCE EXAMINATION

Add the following examination schedule to your list.

Franklin Life Ins. Co.	Regular	\$5	Juvenile	\$2
Reliance Life Ins. Co. of Pittsburgh	Complete	\$5	Child's	\$2
Polish Falcons of America	Regular	\$5		
Continental Assurance Company.				
Form L400		\$3		

We again ask all members to submit whatever insurance blanks that have not been scheduled. Some of the fraternal companies are having the individual pay for his examination, later to be reimbursed. There should be no exception made to these fees in these cases. Be sure to collect the dollar for examinations away from your office.

Since there was no time limit set on the raise of price of insane examinations and Judge Thompson seems very indignant that the medical profession should take exception to her arbitrary schedule of prices for such, there has resulted considerable confusion. No member of the society should make such examination or sign any papers for commitment of insane unless the fee of \$5.00 is paid. When the physician realizes the responsibility which he takes in such proceedings, it seems that any change from such position is decidedly ill-advised.

About May 15 the new arrangement for infant feeding clinics will be established. Under this, the clinics will be held in each hospital twice a week, making four clinics a week, under the supervision of those members of the medical society who are willing to donate one period a week. Internes and student nurses will aid as a part of their educational training. These clinics will be allowed only for infants from families on the welfare list of the county and from those families who have written authority from their family physician. No medical treatment will be advised, such children being sent to their family physician. This is to take the place of the present established baby clinics in the schools.

Dr. Wilson reports one hundred per cent co-operation by the physicians of the county in regard to the immunity program. He has five cards not signed, so it is hoped that those who have not signed will get in touch with him, so that he can complete his list and progress be made in this move.

A ruling was made in regard to pre-school clinics.

First—that the physician in charge should be given some compensation.

Second—that only children of parents on the welfare list and children who have written authorization from their family physician to have the examination made, be allowed in the clinic.

If any member of the society has any other suggestions for the committee to work on, we would be glad to cooperate.

An excellent article in the May *American Mercury*, entitled "The Plight of the Doctor," will show you what we must fight if we are to preserve the private practice of medicine. The editor has a copy in his office which may be borrowed for forty-eight hours if desired.

SECRETARY'S REPORT

The regular April meeting was held April 20, at the Century Club, at which nine dentists joined forty-five members of the society to listen to a splendid paper on "Acute Infections of the Throat and Neck" by Dr. A. C. Furstenberg, of Ann Arbor. The few who missed this probably will never get another opportunity to have this subject presented to them in such a fine style.

At this meeting Dr. Bertram Morse of Whitehall, and Dr. Adolph Dasler of Muskegon Heights, were elected to membership.

A special meeting was held April 13 at the Hackley Union Bank Building.

The resolution passed in March regarding donation of services in projects where other workers are paid was amended, to add the word "adequate" in reference to the physicians receiving "adequate" compensation.

A motion was made and passed that the Probate Court be notified that members of the Muskegon County Medical Society demand a fee not less than

\$5.00 for examinations in mental cases. The Public Relations Committee was asked to investigate if the long questionnaire in these cases is legally required.

The x-ray fee schedule was accepted and the last obstacle to printing our complete fee schedule was overcome.

The Public Relations Committee presented its plan for taking over the city health department. There was considerable discussion and it was finally agreed that the Public Relations Committee should, with the consent of the City Commission, complete this plan and put it in effect for one month.

SHIAWASSEE COUNTY

"The Use and Misuse of Digitalis" was the subject of an address before the Shiawassee County Medical Society at the monthly meeting at Memorial Hospital, May 20, 1934, by Prof. Frank N. Wilson of the Michigan University Medical Department.

The meeting was the largest in point of numbers that has been held in a long time. The speaker said that digitalis is too powerful a drug to be used indiscriminately by the laity, and although it has been a heart remedy for many years, there is a great deal to learn about its use yet.

By reason of the fact that there is such a wide difference in the reactions of the drug in different patients, it should only be prescribed by physicians who may watch the effect, he said. There are not a few kinds of disease in which it is sometimes used that are actually made worse instead of better, he declared.

Doctor Wilson, who is a professor of cardiology at the university, is in much demand by the profession, not only in Michigan but in large medical centers outside, and the local society was fortunate in having him here.

Dr. I. W. Green, a member of the committee of medical economics of the State Medical Society, gave a very interesting report of the recent meeting of the committee.

Among those from out of town in attendance were Drs. W. S. Bell, Elsie; W. M. Taylor, Ovid; W. B. Fillinger, Ovid; E. J. Carney and C. J. Richards, Durand; F. L. Covert, Gaines; G. B. Wade, Laingsburg, and Dr. Chambers, Flint, and Dr. Buzzard, Chesaning.

May 7 was the date of the first regional conference of the Committee on Preventive Medicine of the Michigan State Medical Society, which was held at Owosso at a six o'clock dinner at the Hotel Owosso. There were twenty-three physicians present.

The program consisted of the following:

1. Differential Diagnosis in the Acute Communicable Diseases

JOHN N. GORDON, M.D., Detroit, Director, Division of Epidemiology, W. K. Kellogg Foundation

2. The Economics of Preventive Medicine

- (a) Program of the Michigan State Society

L. O. GEIB, M.D., Detroit, Chairman, Committee on Preventive Medicine

- (b) General Principles

HENRY F. VAUGHAN, Dr.P.H., Detroit, Member of Board, W. K. Kellogg Foundation

- (c) Application to Counties

G. M. BYINGTON, Battle Creek, Associate Medical Director, W. K. Kellogg Foundation

The talks were illustrated with lantern slides, and were very interesting. The program was concluded

at nine-thirty and the party left for Clare to spend the night, intending to be at Traverse City the next forenoon.

W. E. WARD, *Secretary-Treasurer*.

UPPER PENINSULA MEDICAL SOCIETY

The thirty-seventh annual meeting of the Upper Peninsula Medical Society will be held August 16 and 17, 1934, under the auspices of the Gogebic County Medical Society, at Ironwood, Michigan.

Officers of the Society are: Dr. John J. Walch, president; Dr. Frank G. H. Maloney, vice president, and Dr. Frank L. S. Reynolds, secretary.

Committees in charge of the meeting are:

Program Committee—Dr. W. E. Tew and Dr. A. J. O'Brien.

Entertainment Committee—Dr. T. R. Rees and Dr. H. A. Pinkerton.

Ladies Entertainment—Mrs. A. J. O'Brien, Chairman, Mrs. C. E. Stevens and Mrs. F. L. S. Reynolds.

Headquarters for exhibits, business and scientific sessions will be at the Grand View Hospital.

PROGRAM

Thursday, August 16

Morning Session

9:00—Registration of Members at Grand View Hospital

10:00—Address of Welcome

FRANK L. S. REYNOLDS, M.D., Superintendent, Grand View Hospital

FRANK G. H. MALONEY, M.D., President, Gogebic County Medical Society

10:15—Response and President's Address

JOHN J. WALCH, M.D., President, Upper Peninsula Medical Society, Escanaba, Michigan

10:30—The Differential Diagnosis of Common Neurological Conditions as Met with in General Practice

JOHN L. GARVEY, M.D., Milwaukee

11:30—Management of Hypertension

CHARLES L. BROWN, M.D., Associate Professor of Internal Medicine, Ann Arbor, Michigan

12:30—Adjournment for Lunch at Grand View Hospital

Thursday, August 16

Afternoon Session

2:00—X-ray Diagnosis of Chest Lesions

STEWART PRITCHARD, M.D., Medical and Executive Director, W. K. Kellogg Foundation, Battle Creek, Michigan

3:00—Indications and Technic of Blood Transfusions

JOHN S. LUNDY, M.D., and RALPH M. TOVELL, M.D., Mayo Clinic, Rochester, Minn.

4:00—Injection Treatment of Hemorrhoids

WALTER A. FANSLER, M.D., Minneapolis

5:00—Adjournment for transportation to Koerner's Resort, Spider Lake, Manitowish, Wisconsin, where banquet will be held at 7:00 P. M. The resort is one hour's drive from Ironwood and members will leave St. James Hotel promptly at 5:30 P. M. Road will be plainly marked.

Thursday, August 16*Evening Session—7:00 O'clock*

Koerner's Spider Lake Resort, Manitowish, Wisconsin

Banquet and Dance

Cabaret Entertainment

Five Minute Talks by:

JOHN J. WALCH, M.D., President, Upper Peninsula Medical Society, Escanaba

R. C. WARNSHUIS, M.D., Secretary, Michigan State Medical Society

C. C. SLEMONS, M.D., Dr.P.H., State Commissioner of Health

GEORGE L. LE FEVRE, M.D., President, Michigan State Medical Society, Muskegon

Address—J. D. BRUCE, M.D., Director Post Graduate Medicine, Ann Arbor

Address—HON. WILLIAM COMSTOCK, Governor, State of Michigan

Friday, August 17*Morning Session*

9:00—Sinus Infection—Diagnosis and Treatment
BERT E. HEMPSTEAD, M.D., Mayo Clinic, Rochester, Minn.

10:00—Allergy in General Medicine
CHARLES L. BROWN, M.D., Associate Professor of Internal Medicine, Ann Arbor, Michigan

11:00—The Technic of Nerve Blocking for Various Orthopedic Operations
JOHN S. LUNDY, M.D., and
RALPH M. TOVELL, M.D., Mayo Clinic, Rochester, Minn.

12:00—Art of Writing Medical Papers
RICHARD M. HEWETT, M.D., Chief of Publications, Mayo Clinic, Rochester, Minn.

12:30—Adjournment for Lunch

2:00—Golf Tournament—Gogebic Country Club

LADIES ENTERTAINMENT

MRS. A. J. O'BRIEN, *Chairman*

Thursday, August 16

1:00—Lunch followed by golf or cards at Gogebic Country Club

Friday, August 17

11:00—Out-door breakfast at Lake Superior
Golf or cards at Country Club in the afternoon. Tea will be served.

**WOMAN'S AUXILIARY, MICHIGAN
STATE MEDICAL SOCIETY**

MRS. ELMER L. WHITNEY, President
18224 Wildemere Ave., Detroit

MRS. C. L. STRAITH, Secretary-Treasurer
19305 Berkley Road, Detroit

Ingham County.—With the election of officers for the coming year of chief interest, members of the Ingham County Medical Auxiliary held the annual meeting Monday noon, May 18, following luncheon at the Hunt Food Shop. Lilacs and tulips furnished spring decorations for the luncheon tables.

Mrs. D. A. Galbraith was re-elected president of the society and other officers chosen were: Mrs. Harry Weinburgh, vice president; Mrs. G. F. Bauch, secretary; and Mrs. Horace French, treasurer.

As committee chairmen gave their reports for the

past year, they were presented with lovely corsages by Mrs. Galbraith, and at the close of the meeting the auxiliary presented Mrs. Galbraith with a beautiful bouquet of spring flowers.

Mrs. Howard Willson was in charge of arrangements for the affair.

Oakland County.—At the business meeting of the Oakland County Medical Auxiliary held on Friday, May 22, the following officers were elected for the coming year: Mrs. H. H. Pool, president; Mrs. E. W. Spohn, of Royal Oak, vice president; Mrs. F. B. Gerls, president-elect; Mrs. V. C. Abbott, secretary; Mrs. H. B. Yoh, treasurer.

Meetings have been discontinued until September.

Kent County.—The Woman's Auxiliary to the Kent County Medical Society held its annual luncheon and business meeting, May 16, at the Kent Country Club. The election results are as follows: Mrs. A. V. Wenger, president; Mrs. R. H. Denham, vice president; Mrs. F. P. Currier, secretary; Mrs. Lynn Ferguson, treasurer; Mrs. J. B. Whinery, corresponding secretary.

Mrs. P. L. Thompson, who has been historian for the Auxiliary since its beginning, gave a very interesting story of the year's activities.

Mrs. Robert H. Denham, social chairman, was in charge of general arrangements and was assisted by Mrs. J. B. Whinery, Mrs. Reuben Mauritis, Mrs. C. C. Slemmons, Mrs. Norman Vann and Mrs. H. M. Blackburn.

**DIFFERENTIAL DIAGNOSIS OF ACUTE
POLIOMYELITIS**

M. BERNARD BRAHDY, Mount Vernon, N. Y., and MAURICE LENARSKY, New York, discuss the first, second and third stages of the disease and state that of 1,123 patients admitted to the Willard Parker Hospital in 1931 with the diagnosis of poliomyelitis, 113 did not have poliomyelitis but in whom thirty-six other conditions were diagnosed after clinical study and laboratory investigation in the hospital. There were twenty-eight patients with ten different conditions who supposedly had poliomyelitis in the first stage; fifty patients with twenty different conditions simulating poliomyelitis in the second stage, and thirty-five patients with twenty-one different conditions simulating poliomyelitis in the third stage. The majority of these patients should have had a correct diagnosis made by their personal physician, even though the diagnostic difficulties are greater in the home than in the hospital. The family physician sees many patients in the first stage of the disease, at a time when he is unable, with certainty, to establish the diagnosis of poliomyelitis. However, in many instances it is possible to find some other condition to account for the patient's symptoms. There is a tendency, especially during epidemic periods, to make the diagnosis of poliomyelitis without obtaining a history and making a careful physical examination. As the disease progresses into the second or third stage there are more tangible symptoms on which to make a positive diagnosis of poliomyelitis. Parallel with the increase in the number of symptoms there is an increase in the number of conditions mistaken for poliomyelitis. Nothing is more important than a careful history and physical examination. If, in addition, poliomyelitis is considered as occurring in three stages, the different diagnosis will be simpler and the percentage of incorrect diagnoses will decrease.—*Journal A. M. A.* (April 28, 1934).

CONTRIBUTED ARTICLES

CARCINOMA OF THE COLON: SURGICAL CONSIDERATIONS*

CHARLES W. MAYO, M.D.†

Division of Surgery, The Mayo Clinic

ROCHESTER, MINNESOTA

Were I to attempt here to treat of all the important factors concerned with the surgical consideration of carcinoma of the colon, I would demonstrate two things: (1) that I was very foolish, and (2) that I had no consideration for my audience. I have sat through too many talks not to have learned that brevity is one of the main attributes of a successful conclusion. There have been times when only the strained bonds of civilization have protected the speaker from bodily harm. Realizing this, and the magnitude of this subject, I am constrained to confine myself to a few generalizations and a few details which impress me as of importance from the surgical viewpoint in dealing with carcinoma of the colon.

COÖPERATIVE CARE

The first essential in efficient treatment of the patient who has a surgical type of colonic disease is recognition of the fact that the management must be coöperative between specialized internists and specialized surgeons. No matter how excellent the surgeon, morbidity and mortality in these cases are definitely and favorably affected by such a scheme. Any condition of the colon which requires operation is serious, and most cases are of long standing before the patient has applied for help. For optimal results, it is necessary to group the patients in a division apart from that of general medicine and apart from that of general surgery; and so, let us put down as the first general point in this connection, coöperative management.

We shall not consider at this time those factors which are concerned with correct diagnosis of lesions of the large bowel; rather let us assume that the diagnosis has been made, and that we are interested in those details of preparation, operation, and postoperative care which in summation give to the patient the greatest chance for recovery and future well-being. We must keep in

mind that in any type of surgery, it is the attention to details that usually makes the difference between success and failure.

PREOPERATIVE FACTORS

Preoperative preparation has five principal objectives: (1) to establish measures of rehabilitation; (2) to overcome obstruction; (3) to reduce the virulence of the organisms present in the colon; (4) to prepare the peritoneal cavity against peritonitis by vaccine, and (5) to estimate as nearly as possible the surgical risk involved.

We must keep in mind that the general measures employed vary with individual patients, but for the most part the following routine is followed. Sodium phosphate, saturated solution, 4 to 8 drachms (16 to 32 c.c.), or castor oil, 30 to 60 c.c., is given, the dose varying with the condition of the patient and the amount of obstruction present. Next, irrigation with physiologic saline solution is carried out twice daily, until twenty-four hours before operation. By these means the effects of obstruction are reduced, and the bowel is markedly emptied of the virulent organisms which frequently grow luxuriantly secondary to obstruction. Any barium which may have remained after roentgenographic studies, also is removed completely. As an added precaution, a flat roentgenogram of the abdomen, made about forty-eight hours after rectal administration of barium, eliminates the danger of sending a patient to the operating table with barium still in the bowel. There is nothing more dangerous to the patient and, incidentally,

*Mayo Lecture, University of Michigan Medical School, Ann Arbor, Michigan, April 27, 1934.

†Charles W. Mayo received M.D. from University of Pennsylvania in 1926, M.S. in Surgery from the University of Minnesota in 1931. He is Head of the Section in Division of Surgery, The Mayo Clinic; Instructor in Surgery, The Mayo Foundation for Medical Education and Research, Graduate School, University of Minnesota, and a Fellow of the American College of Surgeons.

more annoying to the surgeon than an improperly cleansed bowel.

Administration of a proper diet maintains whatever advantage has been gained by medical cleansing of the bowel and, in addition, builds up the patient from a nutritional standpoint to tolerate the shock of operation. The diet is of a type of which the residue is minimal, and consists of a basic allowance of 2,000 calories of carbohydrate, including principally fruit juices and candy. To this, for those who tolerate such a diet, is added 50 per cent more carbohydrate, making a total of 3,000 calories daily. It has been found that a patient at ordinary rest will gain weight on this diet, and that the bowel will remain comparatively empty. The threshold for carbohydrate is watched for by making determinations for sugar in the urine and blood, although sugar is seldom found in the urine, and the rise in blood sugar is usually within normal limits. Adequate dietary variations can be made in those cases in which they are found necessary.

I should like to consider more fully the question of intraperitoneal administration of vaccine as a measure of precaution against peritonitis. This measure has been used at The Mayo Clinic in approximately 1,500 cases, and much has been learned concerning its value. It is of definite protective and clinical significance. The vaccine is produced from a mixture of streptococci and colon bacilli obtained from patients who have died of peritonitis. It is introduced into the peritoneal cavity seventy-two hours before contemplated operation, because it has been found that the optimal effect can be expected after this length of time. Dixon and Rixford, in their work relative to the cytologic response to vaccine administered to man, found that the average total cell count of the peritoneal fluid of those patients who had been vaccinated was 44,300, nearly fourteen times the average count of all patients who had not been vaccinated. Experimentally, the greatest protection is afforded when the number of histiocytes is high, and this happens to be between forty-eight and seventy-two hours after injection of the vaccine; the vaccine seems to stimulate the phagocytosing mechanism of the peritoneal cavity. The dose of vaccine is between 0.5 and 1 c.c., or between 500,000, 000 and 1,000,000,000 organisms. The injection is carried out under sterile precau-

tions with a dulled needle. The site of the injection is usually on the side opposite to that on which the surgical procedure is to be carried out.

By close observation of the temperature following injection of the vaccine, Barga and Trenouth found that it was possible to make certain predictions relative to the type of growth which will be found at operation. When metastasis, perforation or inflammation had not occurred, there was just a slight drop in temperature, chilly sensations, or a real chill, more or less severe cramps, and a sharp rise in temperature to between 100° and 104° F., with an abrupt fall to normal in about ten and a half hours. Thereafter the temperature remained normal. Irregularities from this so-called normal, such as continued elevation of temperature over a period of two or three days, indicate usually that complicating features will be found at operation, usually in the form of a perforating lesion, metastasis, or an inflammatory condition. The severity of complications is in direct proportion to the fluctuations in temperature.

Before leaving the question of intraperitoneal injection of vaccine, I should like to make clear one point. It will not prevent peritonitis, nor will it be of any benefit when gross soiling has taken place. The principal benefit lies in a small, middle group of cases in which the scale is tipped against death by the timely mobilization of protective forces.

In the last day before operation, two other noteworthy routine measures are employed to insure a clean and quiet bowel; namely, aspiration of the colon by means of a syringe and administration of camphorated tincture of opium in three doses, respectively of 1, 1, and 2 drachms (4, 4 and 8 c.c.) at 2, 6, and 10 p. m., if operation is to be performed in the morning. The camphorated tincture of opium, in addition, tends to give the patient a quiet and restful night before operation.

Close observation while the usual period of three to five days of preparation is in progress, enables the surgeon to estimate the surgical risk with a fair degree of accuracy, although nothing can take the place of long experience and, even then, the surgeon may be compelled to take a vacation after the operation to readjust himself to the human factor of error. Age, sex, duration of symptoms, the pathologic grade of the lesion,

when it has been possible to determine it during the course of proctoscopic examination, obesity, anemia, and, not least, the mental attitude of the patient, are among the many factors which enter into the picture and which determine the risk involved.

OPERATIVE FACTORS

The diagnosis has been made, the patient has been prepared for operation, and now he comes for operation. Let us consider at this point some of the operative factors which contribute to safety. Generally speaking, these factors may be divided into two groups: those of surgical judgment and those of surgical technic. Of the two, the first is by far the more important; if judgment is good, at least it involves knowledge of when to stop. The surgeon who undertakes the operative procedure must be continually mindful of his purposes; namely, that the patient survive and live in comparative comfort, and next that the growth be radically removed whenever possible. When the patient is on the operating table and the abdomen is opened, usually the surgeon has two additional aids besides his preoperative observations: direct touch, and visualization of the growth. Consequently, at this time is decided whether the operation shall be exploratory, palliative, a radical procedure in one stage, or a procedure in multiple stages, with the eventual object of complete removal of the neoplasm. Often the decision is not difficult, but occasionally a seemingly small thing will influence one in a debatable case, and time alone gives proof of the wisdom of that judgment. The surgeon should beware of too marked enthusiasm for a particular type of surgical procedure; there is too great a temptation to make the case fit the operation, rather than to make the operation fit the case. Each case must be dealt with as an individual affair and the mind of the surgeon must be flexible to recognize the proper procedure or combination of procedures and to adapt them to the case in hand, as the findings merit. The main points to be considered in selecting the proper operation for the individual patient are: (1) the situation of the growth; (2) presence or absence of local fixation; (3) presence or absence of distant metastasis; (4) age of the patient; (5) the general condition of the patient on the operating table, and (6) the grade of malignancy, when it has been possible to determine it preoperatively.

Although it is not always possible to have at hand a wide range of anesthetic agents, selection of an efficient one aids materially, from a technical standpoint. At The Mayo Clinic, in operating on the colon, spinal anesthesia usually is employed, and generally the agent is procaine, supplemented, if necessary, by nitrous oxide. However, when properly administered, it is difficult to excel anesthesia by inhalation, using nitrous oxide or ethylene for induction, and ether for maintenance. As with most variables in surgery, it is unwise to have a fixed routine in anesthesia; it is far preferable to individualize the patient and give the type of anesthetic that fits the particular patient involved.

Rather than discuss the technic of the different possible operations on the colon, I believe it more valuable to consider the underlying principles involved, which depend on physiology, pathology and anatomy. Technical maneuvers vary in detail with each surgeon, while the general principles are equally applicable to any type of surgical attack on the colon.

Obstruction in one of its forms, acute, subacute, or chronic, is the rule rather than the exception when a patient with carcinoma of the colon presents himself to the surgeon. Unless it has been possible to relieve the acute obstruction by medical means, surgical decompression of the bowel is in order; this usually is best accomplished by cecostomy, which not infrequently is a life-saving measure when it is impossible, under the circumstances, to determine the true site of the lesion. If the portion of the cecum which is brought out of the abdomen is walled off by vaseline gauze, it may be punctured in six or eight hours, and the restored patient, given adequate observation, later can undergo an operation directed toward cure of the condition.

In the presence of subacute obstruction, particularly if patients are older and debilitated, cecostomy again is of advantage as a safety valve, materially reducing the risk of further operation. If there is no such opening, marked dilatation of the bowel may develop, due to paralysis of the intestinal musculature following operations which temporarily obstruct still further an already overtaxed intestine.

The original, so-called obstructive resection, or modified Mikulicz operation, did not provide a safety valve, but it has subse-

quently been found that when it is possible to exteriorize and remove a carcinoma of the colon by such an operation, it is of material advantage to provide a safety valve, before the operation or at the same time as the operation, by cecostomy, appendicostomy, or by placing a catheter in the proximal loop of bowel, near the clamp, and above the peritoneum. When this is done, one need not worry about loosening the clamp on the upper loop of intestine but may patiently wait until both upper and lower clamps drop off spontaneously.

In the presence both of acute and subacute obstructions; especially the former, one must be very careful in handling the bowel. An intestine, in the presence of such a condition, can be likened to a tent without a fly in a rainstorm; it leaks wherever touched, and peritonitis and death result from touching it. When chronic obstruction exists, one finds a thick-walled bowel above the growth, due to the effort of the colon to overcome the difficulty, not yet insurmountable, of forcing the waste material beyond the obstruction. Such an hypertrophied bowel must be handled carefully, but it is not as vulnerable as the intestine in acute and subacute types of obstruction. It must be remembered that when chronic obstruction exists, a subacute or an acute condition may be imminent.

In surgery of the colon, the blood supply must be carefully considered. Emphasis always has been placed on the paucity of blood supply to the large bowel, and the importance of maintaining adequate circulation in any surgical procedure on this portion of the intestinal tract frequently has been stressed. Failure to achieve success has not infrequently been traceable to the lack of appreciation that the branches that supply the large intestine are not standardized, as many textbooks would cause us to believe that they are. Steward emphasized this point. A simple rule that may obviate trouble in this regard is closely to observe the small arteries and the color of the bowel, both proximal to, and distal to, applied clamps. Occasionally it may be necessary to resect a larger portion of bowel than originally was intended. It is especially difficult, in the abdomen of an obese person, to be certain of the circulation, but great caution always is indicated.

In speaking about surgery of any part of

the body, perhaps one should not be too emphatic about "do's" and "don't's," because occasionally a "don't" seems to be justifiably transformed into a "do." However, it is rare that end-to-end anastomosis of the colon can be safely accomplished. The transverse colon and the rectum may, on occasion, suitably lend themselves to such a procedure, but rarely does the descending colon or the sigmoid. In the peritoneal cavity, when anastomosis of colon to colon, or of small bowel to colon, is indicated, it is well to take advantage of epiploic tags and omentum to protect the line of suture.

When dealing with carcinoma of the right portion of the colon, there is a certain advantage which must be considered. Malignant growths in this region are slower to metastasize than those of any other part of the large bowel. Its "filter-system" seems to be almost impregnable to substances other than liquids. Resection here is carried out in one or two stages. The two-stage procedure, for a majority of cases, is perhaps the safer. When this type of procedure is chosen, preliminary side-to-side or end-to-side ileocolostomy is performed, and a few weeks later, when conditions warrant, resection is carried out with comparative ease. Particularly is this suitable when, on original examination, the growth is found to be fixed. After diverting the intestinal stream, much of the fixation of the growth disappears, due to lessening of inflammation, and the opportunity of the part for rest. This is also true in other parts of the colon, where one finds a growth which on first examination feels and appears inoperable. Colostomy, to divert the intestinal content, rest, deep roentgen therapy and, when possible, radium; these, happily combined, not infrequently will reduce and loosen a growth to a point at which radical removal is not only possible but curative.

The question of drainage in operations on the colon usually can be easily determined. The same principles apply here as in operations in other regions. When large pockets are left, even after complete peritonization, as in resections of the right portion of the colon, it is wise to insert a small, soft rubber tube to allow subsequent serous collections to be discharged. Also, when there has been unavoidable contamination, it is well to drain the region. In women, vaginal drainage frequently can be used to advan-

tage. Collections of toxic materials frequently can be prevented by adequate and properly inserted drains.

Before going on to the postoperative factors of surgical importance, I should like to indicate a last cardinal surgical principle; namely, accurate peritonization of all raw surfaces. It makes little difference in what portion of the colon resection has been carried out; the covering of raw surfaces in this manner prevents adhesions and conduces to rapid and safe healing.

POSTOPERATIVE FACTORS

The postoperative care of the patient who has undergone an operation on the colon is an essential third of this subject. As a group, these patients have a more disturbed postoperative course than those on whom more usual abdominal operations are performed, and so more careful supervision is required to obtain satisfactory results.

Those patients who have been given spinal anesthetics are kept flat in bed until they are able to move their feet freely. After this, they may be placed in the position which best serves dependent drainage, if such be indicated, and which, at the same time, satisfies the natural desire for comfort. Both physical and mental rest are of great importance in any convalescence, and particularly in cases of the sort under consideration should they be emphasized. Liberal allowances of morphine, to induce intestinal quiet and to relieve pain, are given for at least the first forty-eight hours. Fluids are not given by mouth, at least for this period, and preferably not until gas is passed, either through the natural or through the artificial vent. Necessary fluids are given subcutaneously or intravenously. Those who are not familiar with the continuous drip, which may be used with either method of administration, should familiarize themselves with it. By this method, if indicated, fluid can be administered uninterruptedly, for several days; the daily intake can be regulated as is required in the individual case, and there is not the discomfort pursuant to periodic introduction of needles.

There are certain dangers, and consequently precautions, to take when administering fluids intravenously. One hour should be taken to give 1 liter of saline solution, and two hours to give a similar amount of solution of glucose, and even

then administration should be under the supervision of a physician. One must be especially watchful for unfavorable reactions if patients are aged, obese or short-necked, and in the presence of hypertension, arteriosclerosis, a weakened myocardium, or considerable infection. If there has been, or is, evidence of thrombosis, phlebitis, or pulmonary infarcts, solutions should not be given intravenously. The ideal solutions, when indicated, have been found to be physiologic saline, 5 or 10 per cent glucose, and 5 per cent glucose in physiologic saline.

Once operation has been decided on, it is wise to determine the blood group of the patient. Transfusion, once or more than once, may play an important part in the postoperative course. Its timely use frequently reinforces resistance and makes the difference between life and death.

Ileus is a serious complication of colonic surgery. It is amenable to treatment in direct proportion to the seriousness of the cause, whether the ileus is of paralytic type, caused by shock or peritonitis, or whether its cause is mechanical. Hot stupes, pituitary extract, physostigmine or, at times, acetylcholine may be used to advantage in this condition. A small spinal injection of procaine, because of its preliminary active stimulatory effect on the bowel, may be of benefit in occasional cases. Enterostomy, when other less drastic measures have failed, serves a useful purpose to decompress a bowel, but it is resorted to too late to be of assistance in most instances. In the late stages, it has no more effect than a coup-de-grace, and this has no place in medicine or surgery.

Patients are prone to develop parotitis following operations on the large bowel. The etiologic factor or factors are not known. As a precaution against it, gum may be chewed, off and on, as soon as possible after operation. The most efficient treatment for such a complication is application of radium in doses sufficient to produce the desired result. Radium, supplemented by application of heat or cold, will, in the majority of instances, prevent development of suppuration.

Other complications may be encountered to make miserable the life of the patient and of those attending him. Whether they be pulmonary, cardiac, urinary, or infectious involvement of the wound, they are treated

much the same as when they occur following any other type of surgical procedure. One must be prepared for anything, and to get the optimal results one should institute proper treatment early.

I do not labor under the illusion that I have covered all of the important points in surgery of the colon, nor do I feel that justice has been done to those touched on in this discussion. However, one interested in

surgery finds it advisable occasionally to review what may already be well ingrained, and such fundamentals to surgical success as adequate preoperative preparation, application of and attention to surgical details, and close observation of and prompt attention to postoperative complications are the only means, other than early diagnosis, by which one can hope to hold out a favorable prognosis in cases of carcinoma of the colon.

EXCRETORY UROGRAPHY

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Since the introduction of a practical clinical method of urography by the intravenous use of uroselectan in 1929 by Von Lichtenberg and Swick,² much has been written about this method of study of the urinary tract. Almost every month one finds additions to the literature of so-called excretory urography. To this literature we can hope to add nothing original. However, we have been asked to review our experience in this field and to point out the value of this diagnostic procedure and its limitations.

In the beginning of this work we used the uroselectan powder, which had to be dissolved and sterilized and made into a solution of a volume of about 100 c.c. This took time and care and was more unpleasant for the patient than the present solution of a volume of 20 c.c.

We have seen only one serious reaction to this drug and this was in one of our early cases in which there was a technical error in the preparation of the solution. The patient went into a state of syncope when about one-fourth of the preparation had been given. The administration of the drug was discontinued. The patient was revived and suffered no further effects of the drug. However, patients quite generally complain of pain along the course of the vein while the drug is being administered and this appears to be the case without regard to the time taken for the injection. We have had the misfortune a few times to "spill" small amounts of the drug outside the vein, but have never seen any serious injury to the tissues from this accident. So far as we know, there have been no thrombosed veins.

It is our observation that the amount of the drug should be varied according to the weight of the patient. Very heavy, large patients should have more than 20 c.c., while

very small adults and young children may have less.

Our series of cases numbers 111, seen in office and hospital diagnostic x-ray examinations. These patients were referred for the most part by men in general practice and on account of some one or more symptoms referable to the urinary tract. Some were referred for general x-ray examination in the course of which it was necessary to eliminate the urinary tract as a possible cause of symptoms not especially characteristic of urinary tract disease and a few were examined by this method as a way of making a differential diagnosis of abdominal tumors.

One of the first questions that came up in this work was the value of this method in determining renal function. We have studied our series of cases with especial attention to this feature and have come to the conclusion that the prompt appearance of the drug in the renal pelvis is quite comparable to the appearance time of indigo-carmin or phenol-sulphone-phthalein as a method of estimating the renal function. In this series of cases were a considerable number who either before or after this procedure had functional tests made at cystoscopy and in all of these the function indicated by excretory urography was corroborated by either the indigo carmine or phenol-sulphone-

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phthalein tests. Where good excretion is seen on the first film after five or ten minutes one may feel reasonably sure that the function is normal. Where the excretion is absent or much delayed other tests have given like results.

In this connection might be mentioned a case of ureteral block from a stone in the upper ureter. On the flat plate the stone shadow was shown on the right side. Twenty c.c. of Neo-Iopax were given intravenously. A normal left kidney pelvis was shown in ten minutes, but after two hours there was no visualization of the right pelvis. The surgeon was unwilling to attempt the removal of the stone on this evidence and the patient was sent back the following day for cystoscopic study. A preliminary film made after the passage of the right catheter showed a much dilated right pelvis filled with the Neo-Iopex. This was twenty-four hours after the administration of the drug. This and similar experience in other cases with a blocked ureter with much delayed excretion of the drug brings up the question of what light this may possibly throw on the physiology of the kidney. Is there some fixation of the drug in the kidney? Why is not the drug entirely excreted by the normal kidney? That there is some fixation of the drug in the kidney is suggested by the common observation that the kidney itself as well as the kidney pelvis is much better visualized on the x-ray film after administration of the drug.

Probably the most useful field for the employment of this test is in localizing suspected stone shadows. Unless the function of the kidney is so far interfered with as to prevent completely the excretion of the dye one can in the majority of cases localize the stone shadow accurately. One can say whether the stone is in the parenchyma or pelvis of the kidney, in the ureter or bladder or entirely outside the urinary tract. One can also draw conclusions as to the amount of kidney damage and the size of the pelvis. In cases where there is some blocking of the ureter by stone the x-ray demonstration is particularly satisfactory provided there is any secretion of the dye on the affected side. Many cases are referred for x-ray examination where shadows are found on the preliminary plate and there is a question as to whether they represent phleboliths, calcified glands or true urinary calculi. It is certainly much more simple to eliminate such ques-

tionable shadows by this method than to subject the patient to a cystoscopic examination. In this connection it should be stated that the portrayal of ureteral shadows by this method is not always satisfactory. It is sometimes desirable to have a considerable number of films in order to get a satisfactory demonstration of the ureters. Different portions of the ureter may be shown on the different films and by taking a composite of all the entire ureter may be made out. We have tried compression as a method of filling the ureter without much success. Elevation of the foot of the table to a moderate degree seems to be of some help in showing the ureters on the x-ray film. Films made with the patient in the erect position quite uniformly fail to show the ureter unless it is blocked.

Dilatation of the kidney pelves from imperfect drainage or infection or both as usually is the case, can as a rule be well shown by this method. The cases in which this is not true are those in which kidney damage has gone on to such an extent that there is not sufficient function to result in the excretion of the dye. One apparently gets a more accurate idea of the size of the pelvis by this method than by retrograde pyelograms. There is no possibility of exaggerating the lesion by over-distention as may be the case in retrograde pyelography. This method of study of the kidney has made possible the demonstration of the effects of pregnancy on the kidney pelvis without putting such patients to the inconvenience of cystoscopy and retrograde filling. Kretschmer¹ and others have demonstrated rather uniform dilatation of one or both pelves during pregnancy.

We have found this method of value in differentiating upper abdominal tumors. We have been able in some cases to make a definite diagnosis of renal tumor and in several cases to exclude the kidney as the site of the tumor. In this series of cases was one large sarcoma of the stomach and one leiomyoma of the stomach in which normal pyelograms were a great help in differentiation. In a few cases the method has been of value in differentiating a splenic tumor from a kidney. Theoretically this should be easily done by physical examination. Practically one not infrequently sees cases in which it is difficult to say whether the tumor mass is spleen or kidney. We had one case referred to us on account of hematuria and a left

upper abdominal tumor which proved to be leukemia. While a preliminary blood count would have been the best diagnostic procedure, the demonstration of a normal left pelvis was much simpler by excretory urography than by cystoscopy. Another case of hematuria and upper left abdominal tumor proved to be a hypernephroma quite conclusively shown by excretory urography. Another case with gastro-intestinal symptoms and an upper left abdominal tumor showed a characteristic kidney tumor pyelogram. It would seem that the method has a rather wide field of usefulness in tumor cases.

In renal tuberculosis we have had a rather limited experience. In one case with calcification and no function and with tuberculosis of the epididymis, we made a diagnosis of an auto-nephrectomy. Where there is an extensive tuberculous lesion with some function left the diagnosis can usually be made by this procedure. Where smaller lesions are present it is often difficult to be sure whether the defect is due to imperfect filling of the pelvis or to tuberculosis. In such cases the retrograde pyelogram would seem to give safer grounds for drawing conclusions.

This method would seem to be the method of choice for demonstrating kidney ptosis whether associated with dilatation of the pelvis or not. One can get a very accurate idea of the range of kidney mobility by making first films with the patient supine, the foot of the table elevated and during expiration and then making films with the patient erect in inspiration. The kidney pelves are, as a rule, not well filled in the erect position but enough of the outline can be made out to localize the kidney. In the erect position we have thought that at times lower abdominal compression was of some use. The increased density of the kidney itself even where the pelvis has entirely emptied makes it possible to estimate the change of position of the kidney with change of posture.

In the case of double ureters or double pelves excretory urography is a method of checking possible oversight of such anomalies at the time of cystoscopy. I suppose that urologists seldom need such a check, but as a roentgenologist who a great many years ago before the local advent of the urologist took up cystoscopy as a means of helping out in making diagnosis of cases referred

for x-ray study, I fear that I have overlooked many such anomalies.

Excretory urography should be of great value in injury cases where there is a question of rupture of the kidney, bladder or urethra. Our experience in this class of cases has been very limited. In the few cases where it has been used it has been of distinct diagnostic value. It would seem that if surgeons who see a large number of accident cases understood the value of this procedure the roentgenologist would be called on oftener for the study of suspected urinary tract injury by this method.

In prostate hypertrophy or other types of bladder-neck obstruction this method gives much information. One gets a very good idea of the amount of back pressure in the ureters and kidney pelves and, as we have already mentioned, a fairly good notion of the amount of impairment of kidney function. In cases where obstruction has resulted in diverticula it gives a satisfactory method for study of these conditions. It is also of definite value in showing residual urine after the patient has emptied the bladder as completely as possible. In this connection we may add that we have a few times shown unsuspected bladder tumors by excretory urography. It is our opinion that the best way of demonstrating bladder tumors roentgenologically is by the old method of pneumocystograms but we have a few times diagnosed bladder tumors in the cases of a routine intravenous study.

Another field of usefulness for this method is in cases for differential diagnosis where there is not much suspicion of the urinary tract, but where one feels that it is important to make some effort to eliminate urinary tract disease. In other words, in cases where there is no urinary tract disease. Quite obviously many such cases will not be subjected to cystoscopy and retrograde pyelography. We have used this in many such cases, especially in pelvic disease in females and have found it especially helpful.

It is unnecessary to state that this method has a wide field of usefulness in cases where for one reason or another cystoscopy is impossible or unsatisfactory: in urethral stricture or obstruction from any other cause; in young children; or in acute urinary tract inflammation; or in cases of profuse hemorrhage. It occasionally happens even in the hands of experts that ureteral catheterization fails and for this reason retrograde pye-

lography is impossible. Many patients with irritable bladders will refuse a second cystoscopy and in such cases excretory urography may be a useful substitute.

In the beginning of this work there was, a feeling on the part of urologists that this method of study of the urinary tract was an intrusion on the field of urology and that it was necessary to defend retrograde pyelography by cystoscopy against this intrusion. Apparently this feeling has now entirely disappeared. The enthusiast for the method has found that many cases studied by this method still require cystoscopy and the urologist has found it a distinct addition to his diagnostic procedures. In urology as in every other field of medicine one must welcome anything that makes us better able to know and understand disease processes.

We have spoken to some extent of the advantages of this method of diagnosis. Let us briefly speak of its disadvantages. In the first place one must recognize that the mine run of pyelograms made by this method is far inferior to that secured by retrograde filling. One may get a good percentage of entirely satisfactory pyelograms but not in anywhere near the percentage that one gets in carefully made retrograde pyelograms. Filling is likely to be imperfect or faint and small lesions may be overlooked. Ureters, as a rule, are not well shown unless

they are obstructed. Of course the accurate localization of the source of hematuria or pyuria is many times in doubt without cystoscopy. In the case of bladder lesions there can be no comparison of the information secured by direct inspection of the bladder and that obtained by cystography.

To recapitulate, may we say that excretory urography (1) often gives us a fairly accurate idea of kidney function; (2) is an accurate method for localizing urinary calculi; (3) shows gross changes in the pelvis and ureters; (4) is of great value in differentiating upper abdominal tumors; (5) will show many advanced cases of renal tuberculosis; (6) is an accurate method of demonstrating ptosis; (7) shows many anomalies easily overlooked by cystoscopy; (8) is of great value in studying suspected cases of urinary tract injury; (9) is of definite value in bladder-neck obstruction cases; (10) has perhaps its greatest field of usefulness in demonstrating normal urinary tracts. It is not a substitute for cystoscopy. It would seem that, in addition to being a valuable aid to the urologist, it has a definite place in diagnosis in more general fields of medicine and surgery.

REFERENCES

1. Kretschmer, Herman L.: *Jour. A. M. A.*, 101:1933 (Dec. 23), No. 26.
2. Swick, M.: *Amer. Jour. Surg.*, 8:405 (Feb.), 1930.

THE FLUORIDES AS AN AID TO IODINE IN HYPERTHYROIDISM*

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Despite the beneficial effects following its administration in hyperthyroidism, iodine has certain limitations to its usefulness which markedly reduce its therapeutic value. Among these may be listed its temporary effect, the possibility of aggravating the hyperthyroid state or producing "iodine-fastness" through prolonged administration, and variations in response ranging all the way from complete ablation of all of the symptoms to absolute refractoriness to the chemical.

It would appear that removal of these limitations might enhance the effect of iodine in hyperthyroidism and produce more consistent and perhaps more lasting results from its administration, and it is with this

effort that the work here reported has concerned itself.

A method for increasing the absorption, utilization and storage of iodine is suggested by the manner in which this agent is taken up by the iodine-deficient hyperplastic gland in simple goiter. Here the deficiency hyper-

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plasia is promptly arrested by iodine, and the functioning tissue is thrown into the resting stage. If it were possible to create in the hyperactive thyroid gland a widespread iodine-deficiency similar to that which exists in simple goiter, the administration of iodine should then be followed by an arrest of the hyperplasia, and conversion of the gland to the resting stage. To produce this iodine-deficiency it would be necessary to prevent iodine reaching the thyroid gland so that it could neither enter into chemical combination nor be stored there.

The employment of fluorine and its salts for this purpose seems logical both from the chemical standpoint and from the results following its clinical use in hyperthyroidism as reported by Goldemberg,¹ and Gorlitzer.² Goldemberg has used the fluorides both orally and intravenously with a degree of success that compares very favorably with any of the medical methods for managing hyperthyroidism. He has not, however, followed their use with the administration of iodine, a procedure which, on theoretical grounds at least, should be productive of more uniform and improved results. It was to test out this idea that the alternate use of fluorides and iodides was started.

Five patients with hyperthyroidism, all of whom had shown little or no response to iodine, were subjected to this method of treatment. Two of these, patients 1 and 3, were given fluorides over a long period of time, then iodides for a shorter period. The other three patients were given one or more courses consisting of four weeks of fluorides followed by one to two weeks of iodides, the course being repeated when the symptoms persisted and the basal metabolism remained elevated. The latter method was preferred because it offered the opportunity of fixing with iodine each gain made with the use of the fluorides. It held the advantage of shortening the period of treatment, particularly for the patient with a mild degree of hyperthyroidism, and of being applicable to iodine-resistant patients, and to those with unusually high rates of metabolism in whom thyroidectomy was contemplated.

In both methods a two per cent aqueous solution of sodium fluoride was administered in divided doses in quantities ranging from eighty to two hundred drops per day. The dosage was increased to the highest point as rapidly as the patient's tolerance

would permit. This was followed at the end of four weeks, with Lugol's solution or saturated solution of potassium iodide in divided daily doses of fifteen drops.

Due regard was had for the toxicity of the fluorides as well as their influence on calcium metabolism. Pregnancy and incomplete dentition were considered contraindications to their use. The chemical was in general well tolerated, the only difficulty encountered being nausea and occasional vomiting during the first week. Occasionally the full daily dose of two hundred drops could not be taken, and the quantity had to be reduced.

All of the patients reported here were ambulatory attendants at the outpatient department of the hospital. They were seen once each week, when the general condition was determined. As soon as a basal metabolism of +15 per cent or less was reached, and most of the symptoms had subsided, all medication was discontinued. Visits were then made at monthly intervals, when the general physical condition was determined and a basal rate estimation made if thought necessary.

Case 1.—A patient with exophthalmic goiter unsuccessfully treated with bed rest, sedatives, physostigmine, quinine, Lugol's solution and x-ray. Prolonged fluoride administration caused a slow reduction of the basal metabolism and amelioration of the symptoms. This was followed by administration of Lugol's solution for one month, after which all of the symptoms cleared up and the basal metabolism returned to normal. Observation of the patient for twelve months has shown no recurrence.

J. A., aged sixteen, was a well-developed young adult male whose skin was flushed and moist, who showed, in addition to a mild restlessness, a marked bilateral exophthalmus, a smooth bilateral enlargement of the thyroid with visible pulsation in the neck, and a fine tremor of the hands. He had been suffering from nervousness, weakness, palpitation, swelling of the neck and bulging of the eyes since June, 1930.

From December 16, 1931, to January 30, 1932, he had been hospitalized and had been treated by bed rest, sedatives, physostigmine, quinine and Lugol's solution with no perceptible improvement in his general condition. His basal metabolism on admission was +69 per cent. Two weeks later it was +56 per cent and on January 12, 1932, it was 68 per cent. His blood pressure averaged 166 systolic and 90 diastolic, while his pulse rate was 120. An x-ray treatment was given January 20, 1932, and March 24, 1932. On April 1, 1932, his basal metabolism was +58 per cent.

He was not seen again until May 25, 1932, when he presented essentially the same picture as he had six months previously. His weight was 135.5 pounds.

Sodium fluoride was started in small doses that were increased very slowly. It was not until December 10 that the patient was taking a full dose of 200 drops of the 2 per cent solution. Fluorides were continued until December 24, 1932, a period of seven months during which he took approximately

1,500 c.c. of 2 per cent solution, or over 30 grams of sodium fluoride, with no demonstrable ill effects.

By August 3, 1932, there was no tremor noted and the exophthalmus and thyroid enlargement had diminished gradually. The weight increased slowly to 141½ pounds.

During the fluoride regime his pulse rate varied between 84 and 132 and his blood pressure readings ranged from 142 to 180 systolic and 60 to 94 diastolic. The pulse pressure remained above 50.

On July 25, after two months treatment, his basal rate was +47 per cent. On September 1 it was +48 per cent. On December 12 it was +36 per cent.

On December 24 fluorides were discontinued and Lugol's solution, fifteen drops daily, given till January 27, 1933. No treatment was given after this date. On January 25, 1933, the basal metabolism was +18 per cent. The pulse rate 72, blood pressure 140/80, and the weight 143 pounds. There was no nervousness or tremor, the exophthalmus had completely receded and the thyroid was barely palpable. He felt well enough to return to school.

February 25, 1933: His general condition continued good.

March 25: The weight was 141.5 pounds; the pulse rate 98, blood pressure 160/70 and the basal rate +19 per cent.

April 22: Weight 142.5 pounds, pulse rate, 72, blood pressure 130/80, basal rate +22 per cent.

May 20: Weight 139.5 pounds, pulse rate 96, blood pressure 126/70, basal rate +12 per cent.

June 19: Basal rate +16 per cent.

August 18: Weight 137 pounds, pulse rate 72, blood pressure 110/74, basal rate +11 per cent.

October 18: Basal rate +5 per cent.

November 22: Basal rate 0; no evidence of thyroid hyperactivity could be found.

Case 2.—A patient with mild hyperthyroidism of short duration. Temporary response to six weeks of Lugol's solution. Recurrence of symptoms, then their complete disappearance following four weeks of fluorides and two weeks of minute daily doses of iodides.

No recurrence after eleven months observation.

A. S., white male, aged sixteen, was first seen December 16, 1932. He had been suffering from nervousness, frequent attacks of nausea, and abdominal cramps since August, 1932, and had undergone a weight loss of 33 pounds (from 212 to 179 pounds) during the first month of his illness.

His treatment from mid-September on consisted of sedatives administered constantly, and approximately 22 minims Lugol's solution daily for two weeks followed by a four weeks' rest period. In all, three courses of Lugol's solution had been given.

His irritability and nervousness, together with occasional attacks of diarrhea, tremor, excessive perspiration, palpitation and dyspnea on exertion, had continued to the time of his first visit. Examination showed a restless, somewhat irritable young man whose weight was 191 pounds and height 5 feet 10¾ inches. The blood pressure was 124/70, the pulse rate varied from 72 to 96. There were no positive eye signs; there was a tremor of the hands and fingers; the left lobe of the thyroid showed a smooth enlargement. The basal metabolic rate was +26 per cent.

A daily dose of thirty drops of 2 per cent sodium fluoride was started December 17, 1932. This was increased to forty-five drops on December 23. On December 30 his weight was 195 pounds, the blood pressure was 128/78, and the pulse rate 90. Three days previously he had an attack of abdominal cramps with diarrhea. He complained of feeling tired all the time. Fluorides were increased to seventy-five drops daily.

On January 6, 1933, the weight was 194 pounds, blood pressure 128/80, pulse 84. He was feeling

much better. Tremor absent. Irritability and nervousness diminished. Fluorides increased to ninety drops daily.

January 13: Weight 194 pounds, blood pressure 136/64, pulse 96. Nervousness and restlessness improved. Fluorides were discontinued and a daily dose of 15 mgm. iodine administered for two weeks.

January 20: Weight 191 pounds, blood pressure 124/80, pulse 84. General condition good. The basal metabolic rate at this time was +3 per cent.

He was next seen in August, 1933. His weight was 178 pounds, blood pressure 110/60, pulse 80. He looked healthy despite his loss in weight and was well proportioned for his height. There was no thyroid enlargement, no tremor, palpitation or excessive perspiration. The basal metabolic rate was +12 per cent.

In September, 1933, his weight was 178 pounds, blood pressure 124/68, pulse rate 84. No evidence of hyperthyroidism could be found.

Case 3.—A patient with toxic adenoma who had experienced some temporary relief by taking tincture of iodine in drop doses. Administration of fluorides (39 grams) over a six months period produced relief from most of the subjective symptoms and resulted in a decrease in the size of the thyroid gland. The basal metabolism remained elevated. Lugol's solution for four weeks was followed by a reduction in the basal metabolic rate to normal and a complete return of the thyroid to normal size.

There has been no recurrence of symptoms after twelve months observation.

M. K., white, female, aged forty-one, was first seen June 9, 1932. She complained of nervousness and palpitation which had started eight years previously, and a swelling of the neck which was first noticed seven years ago. Tremor, palpitation, nervousness and dyspnea on exertion had gradually increased and she had lost eight pounds in the last year. During the past year, the patient had obtained some temporary relief by taking tincture of iodine at intervals.

The patient had been married eighteen years, and had had four normal pregnancies. Sixteen years ago nephrectomy was performed for tuberculosis of the right kidney.

Examination showed an undernourished, markedly nervous white adult female. The skin was flushed and moist. Slight exophthalmus and lid lag were present and there was a marked tremor. The thyroid showed a firm nodular enlargement throughout both lobes. The pulse was 104, the blood pressure 178/84, the weight 116 pounds and the basal metabolic rate +43 per cent.

June 13, 1932, she was started on sixty drops of 2 per cent sodium fluoride daily. The dosage was gradually increased and by July 14, 1932, it had reached 140 drops daily.

July 18, 1932, the basal metabolic rate was +20 per cent. The only improvement noted was a diminution in the tremor and nervousness.

By October 14, 1932, the dosage of fluorides had been increased to 200 drops daily and the improvement continued slowly.

On October 29, 1932, the weight was 116 pounds, blood pressure 170/80, pulse rate 80. There was no tremor, exophthalmus or lagophthalmus. Thyroid enlargement somewhat reduced. Fluorides continued.

November 2, 1932: Basal metabolic rate +26 per cent.

December 20, 1932: Basal metabolic rate +40 per cent.

December 24, 1932: Weight 113 pounds, blood pressure 130/80, pulse 84. Thyroid enlargement barely palpable; no stare or exophthalmus noted. Sodium fluoride discontinued. Approximately 1950

c.c. of 2 per cent solution had been taken in six months (about 39 grams of sodium fluoride).

Fifteen drops of Lugol's solution daily was started and continued for four weeks. At the end of this time the weight had increased to 118.5 pounds. The blood pressure was 146/88, the pulse rate 88, and the general improvement marked.

January 25, 1933, the basal rate was +5 per cent. The tremor, eye signs and thyroid enlargement were no longer present.

She was seen at monthly intervals until November 1933, and showed no recurrence of her hyperthyroidism.

In April the basal rate was +15 per cent.

In May it was +2 per cent.

In June it was +3 per cent.

In September it was +5 per cent.

On October 18, 1933, the weight was 120.5 pounds, blood pressure 130/90, pulse 84, basal rate +3 per cent. There was no evidence of hyperthyroidism and the patient was in excellent physical condition.

Case 4.—A patient with a toxic adenoma, unimproved by prolonged administration of Lugol's solution. Two courses of fluorides and iodides were given. At the end of the first the basal rate was reduced from +49 per cent to +30 per cent. By the end of the second the rate was +1 per cent and all evidence of toxicity had disappeared.

L.B., white, male, aged forty-one, was first seen in the clinic on January 6, 1933. He suffered from nervousness, insomnia, excessive palpitation, and had lost considerable weight. His symptoms had persisted for two years.

Examination showed a short stocky white male, weighing 149 pounds. He was extremely nervous, had a slight exophthalmus and a tremor of the hands. The thyroid showed a smooth bilateral enlargement, the pulse was 117, and the basal metabolic rate was +49 per cent.

He was given phenobarbital until February 14, 1933, then placed on fifteen drops of Lugol's solution daily. This was continued until March 21 but no improvement was noted.

He was next seen on May 5 when his symptoms were unchanged and he was again given Lugol's solution until May 15. No beneficial effect was noted. On May 25 the basal metabolic rate was +49 per cent.

The patient first came under the writer's observation on June 2, 1934. His weight was 144 pounds, the blood pressure 126/88 and the pulse 96. There was a smooth bilateral thyroid enlargement, a slight exophthalmus and a marked tremor.

First Course: Two per cent sodium fluoride, 80 drops daily, was started on June 2, 1933. The amount was gradually increased until 200 drops were being taken by the third week. Fluorides were discontinued on June 30 and in their place 15 drops of a saturated solution of potassium iodide were given daily for one week. On July 7 the weight was 150 pounds, the blood pressure was 150/90, the pulse 90. No tremor was noted and the patient seemed better. On July 10 the basal metabolic rate was +30 per cent.

Second Course: A second course of fluorides was started on July 14. Two hundred drops of 2 per cent sodium fluoride were given daily for the next four weeks.

On August 11 fluorides were discontinued and 15 drops of saturated solution potassium iodide given daily for two weeks.

August 25: Weight 146 pounds; the blood pressure 150/100, the pulse 84, the basal metabolic rate +1 per cent. Tremor, nervousness and excessive perspiration no longer present. Thyroid barely palpable. No exophthalmus noted.

September 22: Weight 153.5 pounds, blood pres-

sure 140/90, pulse 84. No nervousness, sweating, insomnia or tremor. Thyroid barely palpable. Objectively and subjectively there was no evidence of hyperthyroidism and the patient's physical condition was excellent.

Case 5.—A patient with a toxic adenoma who showed no improvement after four weeks of potassium iodide. Three courses of fluorides and iodides were given. At the end of the first the basal metabolism was +35 per cent. At the end of the second it was +21 per cent. By the end of the third it was +11 per cent and the patient showed evidence of full recovery.

E. C., white, female, aged forty-four, first came under observation June 13, 1933, complaining of palpitation, faintness, marked fatigue and emotional instability. In spite of an excellent appetite she continued to lose weight and noticed, in addition, excessive warmth of the skin and a generalized tremulousness. These symptoms first began in October, 1932. As far back as she could remember she had had a swelling in the left side of the neck and since the onset of her present illness had noticed that she felt better when this swelling was the most prominent.

Examination revealed a tall, thin, alert, restless woman who emphasized her conversation with rapid movements of the hands and frequent contractions of the facial muscles. Her weight was 126 pounds, the blood pressure 166/100, the pulse 120. No eye signs noted. Isthmus of thyroid enlarged and palpable. Right lobe of thyroid enlarged to the size of a hen's egg and smooth. A systolic murmur—untransmitted—was present in the mitral area. A fine tremor of the hands and fingers was noted. X-ray revealed two abscessed teeth which were removed by July 7, 1933. The basal metabolic rate June 14, 1933, was +16 per cent. She had been taking potassium iodide for four weeks previous to her first visit to the clinic.

First Course: Two per cent aqueous solution sodium fluoride, 90 drops daily given till June 20.

120 drops daily given for the next ten days.

200 drops daily given for the next fourteen days.

Fluorides were discontinued July 14, 1933. During their administration the patient's weight dropped to 121.5 pounds, her pulse rate and blood pressure readings were unchanged and both her subjective and objective symptoms remained the same.

Fifteen drops of saturated solution potassium iodide were given daily from July 14 to July 28. Her weight returned to 126 pounds and she felt improved.

The basal metabolic rate on August 9 was +35 per cent.

Second Course: A second course of fluorides was started August 11 and continued at the rate of 200 drops daily to September 8. During this period her pulse rate was lower, averaging about 100, but her tremor and other symptoms continued unaltered.

Fifteen drops of saturated solution of potassium iodide were given daily for one week. On September 18, 1933, the basal metabolic rate was +21 per cent. At this time the right thyroid enlargement looked diminished in size. She felt better but the pulse was still rapid, and there was still some tremor.

Third Course: A third course of fluorides was started September 22 and continued for four weeks through October 13. Saturated solution of potassium iodide was then given for one week. The basal metabolic rate on October 23 was +11 per cent.

On October 27, 1933, the weight was 124.5 pounds, the blood pressure 160/100 and the pulse rate 96. The right lobe of the thyroid, while firm, was reduced in size. There was no tremor. The patient was quiet, much more reserved and said she had not felt as well since before the onset of her present illness.

COMMENT

The hyperplasia of the alveolar epithelium of the thyroid may be considered to be of three types. The first results from a deficiency of the raw basic materials necessary for the production of thyroxine. The second is produced by a deficiency of the raw materials created by too rapid a production of thyroxine. The third is a more advanced form of the second that labors, in addition, under the added load of accumulated incompletely formed metabolites. The first type occurs in the simple goiters and may be promptly arrested by supplying raw materials such as iodine in adequate amounts. The second and third types co-exist in the hyperactive gland in varying proportions. Arrest of these two closely related forms of hyperplasia by supplying raw materials can be effected when the former greatly exceeds the latter, and then only temporarily, since the prolonged administration of the agent in common use for this purpose, iodine, is quite likely to convert the second type of hyperplasia to the third (which is iodine-refractory).

The need for iodine is common to all three types of hyperplasia but the limitations to its use in the two types that exist in the hyperactive gland—where it is needed most,—seriously curtail its value. If it were possible to invoke some means of first converting the second and third types to the first, then the iodine response would simulate that which occurs in the simple goiters. To bring this about, it would be necessary to create a condition analogous to that which induces the hyperplasia of simple goiter, viz., a deficiency of the raw products essential for the manufacture of thyroxine.

This report concerns itself with the results of an effort to shunt the most essential of the basic products, iodine, away from the thyroid gland through the use of the fluorides. The fluorides were selected because of their successful employment in the treatment of hyperthyroidism as reported by Goldemberg¹ and Gorlitzer,² and because of their standing as the most powerful of the

elements comprising the halogen series. Their known ability to displace iodine from chemical combinations in which it exists commended them for this particular use.

SUMMARY

Five patients with hyperthyroidism, previously treated with iodine with indifferent results, were subjected to the alternate administration of fluorides and iodides. All showed an arrest of the hyperthyroidism after a treatment period of varying duration.

The first patient, with an advanced grade of hyperthyroidism of fairly long duration, was treated for eight months, and has remained well since January, 1933 (one year).

The second patient, with a mild degree of hyperthyroidism of short duration, responded favorably to six weeks treatment, and has had no recurrence since February, 1933 (eleven months).

The third patient, with a toxic adenoma of long duration, was treated for six months and has had no recurrence since January, 1933 (one year).

The fourth patient, with a toxic adenoma of two years' standing, responded after three months treatment and has had no recurrence since August, 1933 (seven months).

The fifth patient, with a toxic adenoma of nine months duration, improved after four months treatment, and has had no recurrence since October, 1933 (five months).

CONCLUSION

The uniformly favorable response that followed the alternate administration of fluorides and iodides in the small series of cases would indicate that the method as outlined here may prove of value in enhancing the effect of iodine in hyperthyroidism.

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REFERENCES

1. Goldemberg, L.: Action of fluorides in exophthalmic goiter and hyperthyroidism. *Semana Medica*, Buenos Aires, 38:1809 (Dec. 17), 1931, and 39:1659 (June 2), 1932.
2. Gorlitzer, V.: Ein Neuer Weg Zur Behandlung Der Thyreotoxikose Mit Fluorwasserstoffsäure. *Med. Klin.*, 28:21 (May 20), 1932.

AN ETIOLOGICAL APPROACH TO ASTHMATIC BREATHING

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Asthma, strictly speaking, is nothing more than a respiratory symptom. This symptom is characterized by wheezing or musical air sounds, and is associated with disturbances of the respiratory cycle. The audible symptoms are governed by the acoustic laws. Production of the audible asthmatic symptom is, mechanically speaking, absolutely contingent upon a partial local obstruction of the normal respiratory air flow. There may be a partial encroachment in any zone of this air flow. The site and type of partial occlusion will determine not only the alterations in respiratory rhythm, but also the changes in air sounds.

A partial obstruction may involve only one bronchus. On the other hand there may be multiple or diffuse obstructions, involving many or all of the smaller bronchi. Partial obstructions may be very rapid and acute in onset, as, for example, with foreign body and mucus plugging. Again there is also the slow and insidious onset often seen as a result of other long-standing pathology. Partial obstructions may be more or less constant as with chronic fibrotic changes, or be paroxysmal as in allergic reactions.

The remote causes of partial obstructions are legion and numerous secondary complications are the rule. Infections and other changes intermingle in a confusing fashion. Partial obstructions may easily proceed to total obstruction. This frequent complication induces a whole new set-up of symptoms and prognostic elements. The syndrome of total stenosis is an object of study by itself. Its lurking menace should be remembered and watched for in every asthmatic. A partial obstruction, arising in any portion of the air column, may originate from extra- or intra-bronchial pathology, or be subsequent to changes in the bronchial wall itself.

Whatever the etiology or wherever the site, there will be the audible and physical signs of a check-valve, by-pass, or stop-valve mechanism.

LOCALIZATION OF STENOSIS

Certain infections and metabolic changes are often recognized or suspected by their tendency to produce changes in restricted areas. These changes may also be charac-

terized by their mode of production. A precise knowledge of the site, type and degree of partial obstruction will often reveal the remote etiology. Bronchoscopic examinations are not so often needed if signs and symptoms are appreciated. X-rays are invaluable, yet it is surprising how often the exact level of the obstruction and its cause may be ascertained without radiography. The following set-up of physical signs and symptoms is offered as a guide to the diagnosis of the more common partial stenoses at various levels:

I. PARTIAL TRACHEAL STENOSIS

1. *Constant mild to intense dyspnea with inspiratory effort and stridor usually predominant.* The effort and stridor may be reversed with a check valve set to impede the expiratory air flow.
2. *Irritative cough—brassy and non-productive.* Intensity increased with proximity of pathology to carina.
3. *Intermittent, suffocative attacks.*
4. *Generalized inter-costal retraction on inspiration.* This retraction is absent and actual bulging may occur with expiratory impediment and increased intra-pulmonic pressure.
5. *Laryngeal excursion if inspiratory obstruction is at or above level of glottis.* No excursion if obstruction is at lower level.

II. PARTIAL STENOSIS OF A LARGER BRONCHUS

1. *Dyspnea usually not marked.*
2. *Cough increased by proximity of pathology to carina.*
3. *Wheeze or râles on inspiration, expiration, or both.*
4. *Not ordinarily characterized by severe suffocative attacks.*
5. *However, dyspnea and suffocative symptoms may be induced or increased by patient reclining on unaffected side.*
6. *Breath sounds or percussion notes may be altered in subserved lobe or lobes.*
7. *Inter-costal retraction and narrowing or inter-costal bulging and widening may be noted in areas corresponding to subserved lobes.*
8. *Diaphragm may be higher or lower than normal on the side of the bronchus involved.*
9. *This level of partial obstruction is least likely to give definite symptomatology.*

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III. PARTIAL OBSTRUCTION OF THE SMALLER BRONCHI

(Second degree to bronchioles)

1. *Constant mild to intense dyspnea.* Inspiratory effort and wheeze predominant. Expiratory wheeze may co-exist.
2. Cough not necessarily present.
3. *Inter-costal spaces retracted.* May bulge in suffocative attacks.
4. *Chest usually flat.* Often deformed from continued inspiratory traction efforts.
5. The diaphragm is usually raised. It may be at a normal level or lowered in suffocative attacks.

IV. PARTIAL STENOSIS OF BRONCHIOLES

1. Spasmodic dyspnea, mild to intense, with *expiratory* effort and wheeze predominant.
2. *Chest barrel-shaped.*
3. *Inter-costal spaces usually bulging.*
4. Hyper-resonance on percussion.
5. Diaphragm usually low.

Suffocative attacks from obstruction at the level of the smaller bronchi or bronchioles are not accompanied by loud stridor as from a similar obstruction at a tracheal level. This change in loudness, pitch, etc., is an acoustic result of a difference in lumen of the tubes, length of air column, change in the rate of air flow, and a change in character of the confining walls.

It has been noted above that the valve mechanism of a certain partial obstruction may be set to reverse the respiratory phase ordinarily producing a stridor or wheeze. Such reversals may be noted particularly with foreign bodies, mucous balls, or loosely attached polypoid growths projecting into the bronchial lumen.

The symptoms of total obstructions and atelectases are not considered in the above synopsis. They are decidedly confirmatory of the level of obstruction when present. We will repeat that the employment of the x-ray and fluoroscope, contrast media, and of the bronchoscope is of tremendous value in confirming a suspected pathology. These diagnostic luxuries are not always available, however, and their technical interpretations are not considered in the above set-up of purely physical findings and symptoms.

PULMONARY PATHOLOGY

The chest of an average chronic asthmatic is a veritable museum of pathology. Compensatory, infectious, or mechanical changes, incident to irritation or partial stenosis, may all tend to render a single etiological diagnosis impossible. There can be no attempt to classify arbitrarily some asthmatic patients into allergic, cardio-renal or reflex types.

Cases in which the primary cause of illness may be found and removed often exhibit extensive bronchiectic or emphysematous changes so pronounced that total relief of symptoms is out of the question. Newer radical measures might aid some of these complications. Most of the chronic cases are doomed to prolonged observation and repeated palliative measures. It is useless to speak of a cure in many of these cases.

A diagram of general respiratory pathology is of aid in arriving at an etiological summary. Any outline of this nature must, however, always be co-related with other organs, such as the nose and sinuses, tonsils, the systemic status, and with bacteriological, allergic, blood and x-ray findings. All or any of the pathological items listed in such a scheme are not necessarily important to the asthmatic symptom. Neither can they be overlooked in any future therapeutic plan.

There are numerous exhaustive treatises dealing with practically all of the conditions mentioned in the accompanying outline. It is not of immediate concern to enlarge separately upon individual diagnoses. Any collection of asthmatic cases will bring out, however, certain relationships, foremost of which is, that practically no case will give only one pathological finding. Bronchiectasis of some degree and infection of some type are to all intents a constant finding in chronic asthma. They are the inevitable consequences of continued partial obstruction. They can always be found when positive allergic, new growth, or irritative signs are obscure. An acutely developing partial obstruction, as from foreign body, urticaria, secretion or spasm, may not immediately exhibit such infection or bronchiectasis. Congenital bronchiectasis or that form following infection with local atelectasis and fibrosis may antedate any asthmatic symptom.

ALLERGY

The literature available upon allergy and its relation to asthmatic breathing is voluminous. There has been excellent progress in the study of human hyper-sensitivity. Two basic questions however, are still unanswered. First, what constitutes the so-called allergic diathesis? Secondly, granting the presence of circulating specific and transferable reagins, what is the determining factor producing asthmatic breathing in one patient, initiating an eczematous lesion in an-

may modify an expected allergic response, and be confusing unless the possibility be kept in mind.

It has been suggested from various observations that the smaller bronchi or bronchioles are mostly involved in what we are pleased to call "true" bronchial or allergic asthma. Partial allergic obstructions of the bronchioles undoubtedly induce an expiratory wheeze, along with the other customary concepts we hold of true asthmatic chest signs. On the other hand, *non-allergic* factors may also give rise to obstructive pathology of the bronchioles, and the non-allergic symptoms may then be suggestive of an allergic etiology. Contrarily, a true allergic edema may induce partial obstruction in a large upper bronchus or the trachea, and in this instance there is a marked change in physical findings from the more common type of allergic asthma. There would be a probable exaggeration of the *inspiratory* air sounds. It is possible for both inspiratory and expiratory difficulty to co-exist in the same individual. Indeed, most of the classical descriptions of "true" asthma in the literature cannot but point to both types of respiratory impediment.

SPASM

Bronchial spasm from any cause is difficult to prove. Allergic spasm of the bronchi or bronchioles in man has been both affirmed and denied. Adrenalin, being a non-specific bronchial dilator, may relieve in the absence of a so-called allergic factor. Its benefit in true allergy is, however, the most striking. Allergic asthma, accompanied by infection, fibrosis, massive mucous plugging or individual adrenalin tolerance, may not exhibit such relief.

The bronchial tubes are, after all, but a series of hollow viscera. Spastic reaction may presumably occur here as in other hollow organs, either from direct local stimulation or reflexly from distant foci. The bronchial machinery is constantly adapting itself to temperature and humidity changes, dust, infections, and physical demands. It may be protecting itself from irritation and infection, or accommodating its functions to altering oxygen requirements. The threshold of such physiological reactivity may be modified by local or general causes. Pollens, dusts, infections, scars or toxins may serve as local causes inducing a hyper-irritable

state of reactivity. A normal physiological stimulus may then set up an abnormal symptom.

Sudden changes of temperature or humidity often result in an attack of asthmatic breathing. Irritating gases, physical exercise, whether voluntary or from coughing, may do likewise. Change in position, as in retiring or arising from bed, with a consequent spilling of bronchiectic contents, will induce coughing, and may develop into a spastic asthmatic attack. Emotional instability, glandular dyscrasias, and remote infections or pathology in the gastro-intestinal or other organs, appear at times to influence an already unstable bronchial system.

Infections of the mouth, tonsillar ring, nose, and accessory sinuses are a potent factor in promoting and maintaining a hyper-irritable bronchial system. These upper respiratory infections are fertile sources of lower respiratory re-infection. Moreover, the autonomic innervations of the nasal and bronchial systems are closely inter-related. Stimulation of the nasal membranes, by dusts, odors, or temperature changes, may induce a spastic bronchial reflex, depending upon the presence of hyper-irritability in the naso-bronchial reflex arc. This naso-bronchial hyper-irritability may be only one part of a general vagotonia.

NEW GROWTHS

New growths as a cause of partial bronchial obstruction are more common than generally recognized. Such new growths may be either simple hypertrophies or malignant. An increasing use of the bronchoscope is partly responsible for the increasing diagnoses. Carcinomas of the bronchi and lungs are, in some localities, possibly next in frequency to those found in the stomach and the uterus. Non-malignant polypoid growths projecting into the bronchial lumen are not uncommon. An enlarged thymus or thyroid gland, and hypertrophic or malignant tracheo-bronchial glands may induce irritation or compression stenosis at various levels of the tracheo-bronchial air flow. New growths, whether of the bronchi, lungs, mediastinum, or pleura, may co-exist with infection, allergy, or other pathology.

INFECTION

It is difficult to evaluate the general etiological importance of infection to so-called "asthma." Allergists have been prone to

underestimate its potentialities. Surgeons and internists may err in its over-emphasis. We prefer to remember that an infectious process may precede, co-exist, or follow any other etiological factor, or it may be the prime factor. A respiratory infection may initiate or aggravate an attack. An extra-respiratory infection with fever often relieves an asthmatic.

The finding of certain organisms in the sputum does not necessarily incriminate them in the production of symptoms. Sinus washings or bronchoscopic aspirations, of themselves, are not conclusive. Skin tests and serological manipulations are often difficult of interpretation. Changing concepts of bacterial mutations and life cycles increase the difficulties. The diagnosis of fungus infection is even more intricate and time-consuming.

An organism to be detrimental to an asthmatic, need not be limited to the respiratory tract or even found within the body. A systemic or remote focal infection may be a source of trouble. Free floating spores of fungi, yeasts, or molds may set up a contact allergy, similar to that of pollen hay-fever, or asthma. The original bed of growth for an irritating spore-producing fungus may be found on nearly any site of nitrogenous or carbonaceous substance. Fungi, bacteria, and protozoa may irritate the patient, either by inhalation of spores, contact, ingestion, or actual infection.

Bacterial, fungal and protozoal infection of food or other animal and vegetable matter may produce by-products affecting the vasomotor system. Ergot is a prime example of such a fungal by-product. Cheese is an example of a mold-infested food. The ingestion or inhalation of these by-products or infected substances often induces serious symptoms in suitable individuals. These observations lead one to note that bacteria, fungi, or protozoa may be "non-pathogenic" in the ordinary sense, and yet be a source of illness. We might recall that "non-pathogenic" organisms have been thought to exhibit pathogenic properties after a preliminary experimental sensitization of the recipient animal to the same strain of bacteria. The ordinary infections, as we have learned them in the past, are but a few isolated manifestations struck off from the full keyboard of possible offending organisms.

MISCELLANEOUS

Thick mucous secretions, lying in the bronchi or bronchioles, play an important rôle in the production of asthmatic symptoms. The causes for such secretions are not always obvious. Infection or inflammation, allergy, and chemical irritation, any or all, may play a part in different instances. The type and urgency of symptoms from secretory obstructions may vary, depending upon total or partial obstructions, and upon upper bronchial or lower bronchiolar involvement. Total occlusions of the smaller bronchioles with infection, pneumitis, and local atelectasis, are very common. Total occlusion of a large bronchus by mucus is dangerous and may require immediate bronchoscopic removal.

Mucous secretions, casts and their like, are all foreign bodies in a sense. There is also the rather frequent aspiration of buttons, coins, food, and so on. The diagnosis of aspiration foreign body stenosis is usually made with no difficulty if the condition is suspected. The history or suspicion of aspiration may be quite vague or absent, however, and the possibility of a foreign body partial stenosis has been often and sadly overlooked.

Fibrotic or sclerotic changes, involving the larynx, trachea, bronchi or bronchioles, may induce a chronic partial encroachment upon the normal air flow. Syphilitic and tuberculous infections are the most commonly recognized sources of such changes. Fungal infections, in the author's opinion, have been often overlooked. They, too, give granulomatous and tubercular types of inflammation with severe sclerosis in certain cases. The symptoms of cicatricial narrowing of the air lumen may be of inspiratory or expiratory embarrassment, or both, depending upon the site of involvement. Syphilitic, tuberculous, or fungal fibroses, as a cause of asthmatic symptoms, may be more frequent than luetic, tuberculous, or fungal allergy.

Thyroid, renal, gastro-intestinal, or other organic diseases may result in increased or retained metabolic by-products. Such substances in excess may either induce or aggravate an existing broncho-stenosis.

Sclerosis of the pulmonary blood vessels may, in rare instances, induce an asthmatic type of breathing. Oerza's disease has been frequently diagnosed as bronchial asthma. Compression stenosis of the trachea or bron-

chi from aortic aneurysm is often a source of an asthmatic type of respiration. A thorough examination is often required to differentiate this condition from a similar compressive stenosis from enlarged or malignant mediastinal glands.

A lessened vital capacity, as for example in cardiac disease or emphysema, requires an increased compensatory ventilation to meet the demands of exercise. This results in an increased rate of flow of the tidal air. Under these circumstances a respiratory wheeze is prone to occur with a minimum of obstruction.

Pulmonary congestion is often associated with a wheezy type of respiration. Pulmonary edema and circulatory transudates may impinge upon the normal bronchiolar air lumina. The respiratory flow of air may be locally restricted and a wheeze may be the result. Cardio-renal asthma, however, as a term, is often a misnomer. Auscultation may reveal no whistling or wheezing râles and only a simple dyspnea, associated in no way with local encroachments upon the normal air channels.

Lower bronchial expiratory obstruction, with alveolar distension, and increased intra-pulmonic pressure, has occasionally given bronchoscopic evidence of compression stenosis of a higher bronchus or the trachea. A vicious circle of respiratory obstruction is set up which can only be permanently corrected by relief of the primary lower bronchial obstruction.

A study of the changes in the intra-pulmonic pressure, as related to the easily compressed or distended bronchioles, is most interesting. An integration of these factors with the changes of vital capacity noted in status asthmaticus, cardiac disease, etc., results in an exceedingly complex problem.

There is no short cut to the fathoming of an asthmatic's pathological possibilities. There has been a large amount of doubt in physicians' minds as to the probability of permanent relief for these sufferers. There is just as great a hopelessness and despair exhibited by the average patient. These states of mind represent the extremes engendered by incorrect, or at least insufficient, diagnoses.

One can not be so sure that any one existing specialty should be entrusted entirely with the diagnosis of asthmatic breathing. The human tendency of emphasizing a personal proficiency may work to the general

advancement of medical knowledge, and yet be detrimental to an individual patient. This does not bar one from limiting his work to the alleviation of these patients, providing an open mind is kept as to the manner of diagnostic and therapeutic approach.

There can never be a "cure for asthma." The varieties of pathological lesions found preclude any such hope. It might be better if the term "asthma" itself were dropped from our diagnostic vocabulary. This statement holds in full force against those who would limit the term "bronchial asthma" to that bronchial entity initiated by an allergic mechanism. The mechanism of allergy itself has not been any too well established.

Asthmatic breathing, may we reiterate, is but the symptomatic result of a pathological partial bronchial obstruction. A precise clinical diagnosis of these pathological obstructions should be indicated by some such term as tracheal or bronchiolar stenoses, depending upon the site involved. The degree of obstruction should be noted, *i.e.*, whether partial or total. A description would be incomplete without some reference as to whether the partial obstruction were paroxysmal, intermittent, or permanent.

The field is perfectly clear for a substitution of such terms as "allergic asthma," "non-allergic asthma," and "extrinsic or intrinsic asthma." We might far better employ such phrases as "allergic stenoses," "spastic stenoses," "inflammatory stenoses," "mucous stenoses," or "foreign body stenoses," etc., depending upon the actual bronchial pathology present.

An uncomplicated, allergic bronchiolar stenosis is probably best handled by one of wide experience in judging the allergic phenomena. A foreign body partial stenosis of a bronchus is necessarily relieved by the bronchoscopist. There are, beyond these, a large number of spastic, inflammatory and mucous stenoses, complicated by infection, fibroses, emphysema, bronchiectasis, and, possibly, hyper-sensitivity. This large heterogeneous group forms the bulk of asthmatic patients seeking relief.

There are only two alternatives if we are to progress in our diagnosis and treatment. Either the "allergists" must be more inclusive in their clinical pathological reports, or else, "allergic asthma" must be taken over by diagnosticians who will regard it as just another type of respiratory stenoses.

FUNCTIONAL DISORDERS OF THE OVARY*

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The practice of medicine would be simplified if all the problems encountered could be resolved into clinical entities which include a known cause, definite symptoms and a satisfactory response to specific treatment. Achievement of this correlation of cause, symptom and treatment is the goal toward which physicians, both collectively and individually, are striving in all branches of medicine. Progress in many fields of investigation has been sufficient to establish confidence that certain symptom-complexes are the result of definite and demonstrable causative agents which either may be removed or their effects nullified by application of the proper therapy. Other fields appear more complex, for the symptoms are not constant, and their relation to the exciting cause is not well established, therefore a wise choice of treatment is often difficult. Functional disorders of the ovary illustrate this latter group.

While organic lesions of the ovary are usually well defined and readily recognized, and in many instances disturb the function of the ovary, it is far more common to encounter functional disturbance in which it is not possible to demonstrate any related organic change in the ovary. This lack of correlation may be explained by the inability to inspect the ovaries carefully when the symptoms noted are disturbing but not serious. Furthermore, there are many physiological changes in the body which cannot be definitely related to any anatomical variation.

The two distinct functions of the ovary, *i.e.*, production of ova and formation of an internal secretion, are neither entirely independent of each other, nor are they independent of other parts of the body, especially the other glands which produce internal secretions. This interrelationship alone would make the subject complex even if the other factors involved were well understood. Since endocrinology is a relatively new field of science in which important advances occur so frequently that the whole subject is in a state of flux it would be folly to attempt, in a limited space, to present the whole problem. It is desirable, however, from time to time, to evaluate various

phases of the subject in order to differentiate the purely theoretical from the practically useful contributions.

Since the level of any body function is controlled by a number of interdependent agencies, assignment of a specific function to a single gland cannot mean that the function of that gland is performed independently, but it does imply that the particular gland under consideration is the dominant factor. It is from this point of view that ovarian function is considered here.

Criteria as evidence of variation in the level of ovarian function are either subjective or objective. The former (subjective) are not altogether dependable, but it is to be hoped that advances in the field of psychiatry will improve their usefulness in the future. The latter (objective) are: external and internal characteristics (uterus, tubes, breasts, etc.); function of the uterus; and lactation.

The most frequently useful symptom indicator of ovarian function is the rhythm and amount of menstrual flow. If the accuracy of this indicator seems questionable it may be improved by instructing the individual to keep a chart which shows the interval, duration and amount of flow. A few of the variations of menstruation will be briefly considered.

MENOPAUSE

Menopause may be either artificial or natural, according to the cause of onset. The artificial menopause which follows ablation of the ovaries is an excellent clinical demonstration of the dependence of uterine function upon ovarian secretion. Menstruation ceases and the uterus atrophies when the ovaries are removed. No substitute has been found which will completely reestablish the menstrual flow in the ab-

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sence of ovaries. Some of the apparent exceptions to this are explained by lack of satisfactory evidence that all ovarian tissue has been removed. However, administration of follicular hormone delays the regression of sex characteristics, particularly atrophy of the uterus. Such an atrophic uterus may be stimulated to periodic growth even months after the ovaries have been removed. In one instance treatment with hormone was begun two years after operation. There followed an enlargement of the uterus associated with softening of the organ, both of which disappeared when treatment was withheld and reappeared when treatment was again instituted. In a few instances growth of the endometrium and some bleeding have been recorded after using large doses of theelin. The subjective symptoms, nervousness and hot flashes, are apt to be more pronounced the earlier in life that oöphorectomy occurs.

The proper treatment for menopausal symptoms is controversial. The patient, as well as the physician, is aware of the association of certain symptoms with loss of ovaries. It would seem logical to supply the deficiency by administration of ovarian preparations. Accordingly, all sorts of specific therapy have been employed (ovarian extract, whole ovary, ovarian residue, corpus luteum, follicular hormone, etc.). Excellent results due to all of these agents have been reported. There seem to be two fallacies in judgment of the manner in which the results are obtained. First, the psychotherapeutic effects have not been sufficiently emphasized, and on this account satisfactory results have been reported from the use of ovarian products in which no potency has been demonstrated experimentally as frequently as from preparations known to be potent. Second, results obtained have not been checked by adequate controls.

Natural menopause is a gradual process which marks the close of the reproductive period in life manifested by a variety of changes, the most conspicuous being variations in rhythm or amount of menstruation. There seems to be good evidence that in the earlier stages of the natural menopause a hyper-hormonal state may exist with an increased excretion of follicular hormones in the urine and an increased amount of menstrual flow. This affords an explanation for the cases in which there is apparent a

greater menstrual activity about the time that the menopause is expected. While this overactivity is usually self limited, it is the source of considerable anxiety lest a more serious organic lesion be overlooked. Frequent observations and careful judgment are important during this period.

The hypo-hormonal state associated with cessation of menstruation at the time of transition from the reproductive period to senescence should be accepted as a normal physiological process. During this transition many changes occur, both somatic and psychic, which are largely independent of ovarian function; but since cessation of menstruation is so conspicuous, other less conspicuous variations are overlooked. So far as influencing the flow is concerned, specific ovarian therapy at the menopause is of little avail. As psychotherapeutic agents the various ovarian preparations have been very useful, and their continued use for such purposes should be encouraged. The anterior lobe-like substance obtained from urine of pregnant women does seem to have a specific influence on the hyper-hormonal state, but little, if any, effect on the hypo-hormonal symptoms.

SCANTY AND INFREQUENT MENSTRUATION

The level of ovarian function is lowered in cases of scanty and infrequent menstruation. While this may be associated and dependent upon organic change in the ovary, more frequently it is due to extraneous factors, among which disturbance of the thyroid and pituitary is common. Many such patients have a low basal metabolic rate, as well as other symptoms of hypothyroidism. A large portion of this group may be benefited by proper thyroid therapy. Still others respond to potent products of the anterior lobe-like substance from urine, and a few have been brought to a normal level by the administration of an ovarian preparation, theelin, estrogen, etc.

While there is only doubtful evidence that any gland product stimulates activity of the gland from which the preparation was derived, there is ample evidence that deficiency of gland secretion may be partly or wholly corrected by administration of the gland product. Clinically, there seems to be a small group of cases with scanty menstruation on the basis of ovarian deficiency which are corrected by follicular hormone. The dosage required is difficult to estimate, for at pres-

ent there is no satisfactory measure of the amount or deficiency existing in any particular case. Furthermore, it is not definitely known whether the action is qualitative or quantitative.

Stimulating ovarian activity by correction of thyroid deficiency has been frequently observed. Other symptoms of hypothyroidism may be present and yet a normal basal metabolic rate is reported. This is not surprising when the difficulty in obtaining basal conditions is considered. Therefore, in such instances the cautious administration of small doses of thyroid is not amiss, and the effort is often followed by good results. Frequent observations of this group of patients are necessary.

Anterior lobe-like substance from urine of pregnant women has been used in cases of scanty and irregular menstruation. It has been assumed to have a definite stimulating effect on the ovary. Its manner of action varies in different species and, therefore, in man such therapy is still experimental, and consequently should not be used empirically until more is known about the extent and duration of its action.

PRIMARY AMENORRHEA

Puberty marks the transition from the period of growth to the reproductive period. The changes which occur during this time are numerous and extensive. The process of transition is gradual and for its successful completion requires correlation of all body functions. The most conspicuous event during this period is the establishment of menstruation so that the onset of menstruation has been used almost synonymously with puberty. The time of onset may vary normally within five years. Failure to menstruate at the normal time is referred to as primary amenorrhea. Specific ovarian therapy in this group of cases has been most disappointing. Apparent hypofunction of the ovary is only one manifestation of failure of correlation of body functions. The problem may be nutritional, environmental or constitutional. This group of cases is worthy of careful and complete study of all body functions. A few have been improved by thyroid therapy and occasionally one appears benefited by anterior lobe-like preparations, but caution should be used with the latter until it has been more clearly demonstrated that there is no harmful effect on the ovary.

EXCESSIVE MENSTRUATION

Increased flow or shortened interval does not indicate necessarily hyperfunction of the ovary. In fact, there are many who deny that hyperfunction of the ovary ever occurs.

There is a fairly well defined group in which excessive and prolonged flow is associated with hypertrophy and hyperplasia of the endometrium. The condition is most common as the patient approaches the menopause and in girls shortly after the onset of menstruation. The diagnosis can be established by examination of curettings from the uterus which show hyperplasia of endometrium with cysts which can be seen in the microscopic section, often in the gross. A great many of these patients respond favorably to the administration of anterior lobe-like preparations. It is not equally effectual in all instances, for many are relieved by one series of injections, others require several series of injections, and a few derive no benefit. The dosage is still problematical, but five daily injections of one hundred rat units of antuitrin s.* given a week or ten days before the next flow is expected has served well in most instances.

COMMENT

The subject of functional disorders of the ovary is too broad to cover in detail in such a limited discussion. Translation of experimental work in animals to man is often difficult, but the advances made in laboratories suggest many possibilities for further study of similar problems in man by clinicians. Since human experiments can not be planned on a wholesale scale, but information collected piecemeal as cases present themselves, the observation and coöperation of all clinicians is needed.

Experience has shown that most of the benefit derived from dried extracts of ovary has been psychic, and as psychotherapeutic agents they are valuable. The newer preparations shown to be potent in lower animals have not reacted in a similar manner in the human subject. However, some definite results have been obtained with follicular hormone although not to the extent that animal work would lead us to expect.

The fact that ovarian transplants have satisfactorily substituted for normal ovaries, while ovarian preparations have not proven

*Material for this study was furnished by Parke, Davis and Company.

so effective, would seem to indicate that deficiency of the latter may be either qualitative or quantitative. While normal ovarian secretion enters the blood stream almost continuously, artificial preparations have not been administered in a similar manner. Furthermore, an accurate measure of ovarian deficiency has not been found. Therefore, it is not possible artificially to duplicate ovarian function of internal secretion.

Brilliant results from animal experimentation have aroused considerable hope for similar reaction in man, but the dissimilarity of physiological functions in man and animals must not be overlooked. There is great need for repeated reviews of human symptoms as related to animal experiments with

the hope that a satisfactory correlation will be evolved.

At present ovarian therapy is in a transitional stage. Advances in psychiatry have helped to explain the excellent psychotherapeutic effects of non-potent ovarian products. Potent preparations from the ovary and the anterior lobe-like substance from urine of pregnant women have given enough satisfactory results to justify further study. But, their manner of action and the dosage is by no means well established. In the meanwhile, much can be accomplished to correct disturbances of ovarian function by general measures to establish normal habits of living.

THE OFFICE TREATMENT OF PERNICIOUS ANEMIA WITH LIVER EXTRACT INTRAVENOUSLY AND INTRAMUSCULARLY

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During the past year several workers have shown that liver extract is much more potent, gram for gram, when injected intravenously or intramuscularly than when given by mouth, in pernicious anemia. Since the discovery of the value of liver, and more recently stomach extract, in the treatment of pernicious anemia, a large number of papers have been published describing experiences with these substances. In nearly every case the author has attempted to arrive at a working formula of dosage and especially to establish a maintenance dose. It is our purpose not only to add further evidence of the potency of injected liver extract, but also to attack the problem of dosage from a different angle.

Castle and Taylor⁴ first administered liver extract intravenously as a practicable form of therapy. They give priority, however, to M. Gansslen⁷ for the injection of liver extract. His work was with intramuscular injections, both in pernicious and secondary anemias. Castle and Taylor brought about maximal reticulocyte responses and satisfactory remissions with as small a dose as the extract from 100 grams of liver given intravenously. Poole and Foster⁹ produced a complete remission with intravenous liver extract in a patient who had had a gastrectomy and could not tolerate oral liver extract. William P. Murphy⁸ has recently reported a series of thirty cases of pernicious anemia treated with intravenous and intramuscular liver extract, all showing good response. He suggests a maintenance dose of

extract from 100 grams of liver injected at 5 to 20 day intervals, stating, however, that each patient must be studied as an individual problem. He also shows that injections of liver extract are less expensive to the patient than oral extract or liver. He favors intramuscular injection, as it causes less general reaction than the intravenous extracts that he used. Connery and Goldwater⁵ treated 14 cases of pernicious anemia with intramuscular liver extract, obtaining prompt improvement. They recommend four initial treatments with extract from 100 grams, given at daily intervals, and weekly administration of the same dose for maintenance, stating, however, that smaller doses may be adequate. Wilkinson⁶ reports the use of a highly purified liver extract for intravenous use which does not cause any reaction, such as blood-pressure lowering, chills, or fever.

This product was manufactured in England and is probably identical with one used in some of our cases.

Numerous other observers have reported the use of parenteral liver extract here and abroad, all showing uniformly good results, bringing about and early and complete remission with doses that amount to but a fraction of those necessary by mouth.

Methods and Materials Used.—The patients treated were all classical cases of pernicious anemia, all but one had some degree of postero-lateral sclerosis, and cell measurements showed the presence of macrocytes with a diameter of 11 microns or more. They received no treatment by mouth while receiving injections, except in one case which had failed to respond to treatment by mouth alone (Case 8). Reticulocyte counts were done in some cases, using brilliant cresyl blue on blood films, but daily counts were not possible as a rule, as the patients were not hospitalized. The chief criterion of improvement was the red count, usually done with two pipettes simultaneously for a check.

At first we prepared a solution of Lilly's 343 Liver Extract in water, one vial in 30 c.c., boiled and filtered. Later, material was furnished us by Armour and Company in 5 c.c. ampoules containing extract from 20 grams of liver and 1 c.c. ampoules of extract from 10 grams; by Evans and Company, Runcorn, England, in 5 c.c. ampoules of extract from 100 grams, highly purified, called Hepatex P. A. F.; by Lederle Company in 3 c.c. ampoules of extract from 100 grams of liver (for intramuscular use); and by Lilly in 10 c.c. bottles equivalent to 50 grams of liver. Treatments are recorded in terms of grams of fresh raw liver to which the injections are equivalent.

Case 1.—C. H., male, aged seventy-four, was first seen April 26, 1931, complaining of epileptiform attacks with diarrhea, loss of memory, unsteady gait, two to three years' duration. Family and past history were unimportant. Details of present illness were clouded by poor memory. Examination showed moderate pallor, general weakness and general arteriosclerosis, with no important objective findings in the heart, and a normal blood pressure. He had a positive Romberg sign, active knee reflexes, some disturbances of sensation in the legs and feet, and an ataxic gait. The blood count showed hemoglobin 60 per cent, red count 2.3 million, white count 6,000, marked poikilocytosis and anisocytosis, with macrocytes as large as 14 microns. The reticulocytes were less than 1 per cent. He was given six intravenous treatments with a solution of Lilly's liver extract 343 over a period of 53 days. The first treatment, 100 grams, was followed six days later by a reticulocyte response of 11.8 per cent. The second and

third treatments were with 50 grams, the last three with 15 grams. The red count reached 5 million in 53 days.

He was not seen for three months, during which time his count fell again to 2.3 million. He was given 100 grams (Hepatex P.A.F.) intravenously, and his red count rose to 4 million in sixteen days.

This patient did not have further intravenous treatments or blood counts because of his lack of co-operation. He was greatly depressed and did not want to live, but he was given extract of 100 grams of liver by mouth three times a week. After two months he had a convulsion and died. A blood count shortly before death was 2.4 million.

The first three injections were followed by chills, fever, and vomiting. The smaller doses caused no reaction, but all injections of solutions of 343 liver extract were accompanied by flushing and a sensation of warmth. The Hepatex caused no flushing or chills.

Case 2.—R. L., female, aged sixty-nine, was first seen October 12, complaining of dizziness and poor memory. Her history from another physician was that he had first seen her three years before, when she had the same complaints and evidence of a moderate degree of postero-lateral sclerosis. He had seen her at irregular intervals for three years, during which time her neurological disturbance had remained about stationary and her red count had been in the 2- and 3-millions. She was then given five intravenous treatments in a six-month period without any reactions and with a red count consistently higher than in the period of oral treatment. Her case is tabulated as follows:

Date	RBC Million	Hemoglobin	Treatment
			Oral
11-19-28	1.5		150 gms. daily, in liver
1-26-29	2.5		extract. Also eating
2- 9-29	2.68		small amounts liver.
3-11-29	3.7		
4-23-29	3.0		Uncertain—forgetful.
11-19-30	2.16		
8-28-31			90 gms. daily 11 days.
10-12-31	3.8		
10-12-31	3.8		Intravenous
10-24-31	4.0		100 gms. (Hepatex)
11- 6-31	4.9		Eating small amounts
1-20-32	3.7	13. gm.	liver.
1-28-32	3.8	14.	20 gms. (Armour)
2-10-32	4.65	18.	100 gms. (Hepatex)
2-25-32	3.8	14.5	(Stopped eating liver)
4- 8-32	3.76	15.	100 gms. (Hepatex)
			100 gms. (Hepatex)

Case 3.—J. M., male, aged seventy, was first seen June 6, 1931, complaining of weakness. The past history was unimportant. Present illness dated back about six months; he had had attacks of diarrhea and gradually increasing weakness without other symptoms except a slightly unsteady gait. He was a fairly well nourished Hollander, with a pale subicteric complexion and moderate arteriosclerosis. The red count was 1.5 million, although he was able to travel some distance and walk into the office. The smear was typical of pernicious anemia. There were less than 1 per cent reticulocytes.

He was treated with small doses of solution of Lilly 343 liver extract, 15 gram injections intravenously twice a week for seven doses, then once weekly for five weeks. Another was given ten days later, and the last a month later. On the fifth day the reticulocytes rose to 5 per cent. Sixty days after treatment was started the red count was 4 million, and ten days later 4.9. He had no reactions.

Case 4.—F. H., male, aged sixty-eight, was first seen January 15, 1932. He complained of symptoms too numerous to record affecting all parts of the body, dizziness, nervousness, forgetfulness, and insomnia being the outstanding functional complaints.

He had a diarrhea and considerable loss of strength, and numbness and tingling of hands and feet. The past history and duration of present illness were vague—he said he had never been well. The examination showed slight pallor, undernutrition of moderate degree, numerous extra systoles, a normal blood pressure, and general arteriosclerosis.

His red count was 1.76 million, hemoglobin 9 grams per 100 c.c. The stained film showed the red cells typical of pernicious anemia. He was given 10 c.c. of Armour's liver extract, equivalent to 40 grams of liver, intravenously twice a week for seven doses. On two occasions (the third and fourth treatments) only 20 grams was given, but a slight fall in red count followed, so the dose was increased to 40 grams again. The reticulocytes rose from 0.5 to 2.9 per cent on the tenth day, but the peak may have been missed. Eighty-five days after treatment was started, the red count was 4.2 million, hemoglobin 14.5 grams. He had no reaction following treatment. The diarrhea promptly stopped and his strength improved, but the functional complaints continued.

Case 5.—A. J. M., male, aged forty-one, had a history of pernicious anemia for four years, with three serious relapses, and one period of a year in good health without treatment or liver, after the second relapse. He was first seen in April, 1931, when his red count was over 4.5 million. He had blood counts once or twice a month for five months without treatment or eating liver, during which time he felt well and had a normal count. On September 10, 1931, he complained of loss of sex power during the previous week, and said that this symptom had preceded other relapses. His red count was 3.3 million, and the smear showed many large macrocytes, poikilocytes, and microcytes. He was given 5 c.c. of Armour's extract, equivalent to 50 grams of liver, intravenously. The blood pressure just before treatment was 115/70, and immediately afterward was 108/70. His face was flushed during the injection, but he had no later reaction. The following day he was given a similar treatment. One week later, September 17, the red count was 4.4 million, and he felt considerably stronger, with a return of sex activity.

Date	RBC Millions	Treatment
9-10-31	3.3	50 gms. i.v. (Armour)
9-11-31		50 gms.
9-17-31	4.4	
10- 6-31	3.4	50 gms.
10-23-31	3.92	25 gms.
11- 6-31	4.3	20 gms.
12- 2-31	4.2	
1-14-32	4.3	
1-26-32	3.1	40 gms.
2-17-32	3.68	100 gms. i.v. (Hepatex)
3- 8-32	3.7	100 gms. i.m. (Lederle)
3-29-32	4.6	

This patient should have had slightly larger or more frequent treatments during this period, in view of the blood counts. He felt well, however, and was quite satisfied. He had a slightly ataxic gait, but was never handicapped by it unless he was quite anemic.

Case 6.—G. H., male, aged sixty, had been treated for four weeks with a domestic preparation of liver extract (Castle³) receiving extract from one-half pound of liver (240 gms.) daily. At the end of that time his blood count was: R.B.C. 2 million, Hb. 55 per cent, W.B.C. 3,500. He had a history of a relapse a year previously, which had been successfully treated by transfusion and liver extract. He was incapacitated by paralysis caused by postero-lateral sclerosis. A week after the above blood count, intramuscular treatment was started:

Date	RBC	Hb	WBC	Treatment
1-20-32	2.1	41%		5 gms. (1 c.c. Lilly)
1-30-32	2.2	55		intramuscularly
2- 6-32	2.9	65	3,000	daily for 35 days.
2-12-32	3.1	75	3,100	
2-18-32	3.19	82		
2-24-32	4.1	94	9,600	

Case 7.—M. K., female, aged sixty-six, was first seen March 1, 1932, with a chief complaint of weakness; also had vertigo, headache, tinnitus aurium, sleeplessness, anorexia, and diarrhea. She was well nourished, with the usual lemon-yellow pallor. There was tingling of hands and feet, with normal reflexes. Gastric analysis showed achylia gastrica. She was given intensive treatment as follows:

Date	RBC	Hb	WBC	Treatment
3- 1-32	1.1	32%	3,800	Transfusion 500 c.c.
3- 6-32	1.5	32	3,800	Transfusion 500 c.c.
3- 8-32				100 gm. i.m. (Lederle)
3-14-32				100 gm. i.m. (Lederle)
3-21-32	3.1	52		100 gm. i.m. (Lederle)
3-26-32	3.2	59		100 gm. i.m. (Lederle)
4- 2-32	3.9	64		100 gm. i.m. (Lederle)
4- 8-32	4.3	70		100 gm. i.m. (Lederle)

Case 8.—M. B., male, aged sixty-four, was first seen July 27, 1931, complaining of weakness and numbness. Thirteen years before, he had been diagnosed pernicious anemia during a similar attack, but recovered and felt well until four years before. Three years before, he had a relapse, from which he recovered by eating a pound of liver a day for some weeks. Then he felt well until nearly a year before his first visit. Since that time he had been up and down, with increasing numbness of hands and feet, gradually growing weaker. His examination showed him to be fairly well nourished, pale, very weak, with some peripheral arteriosclerosis. Reflexes were intact, the Romberg a doubtful positive. The blood count showed Hb. 26 per cent, R.B.C. 2.0 million, W.B.C. 4,250, with normal differential, and red cells showing marked anisocytosis and poikilocytosis.

He was given extract of 225 grams of liver daily for five days with a very slight rise in reticulocytes, and the red count fell below 1.5 million. In addition to oral extract, at the end of five days intramuscular treatment was started, giving 20 grams Armour extract daily, 2.5 c.c. in each buttock. The patient experienced practically no discomfort. Five days after starting the injections, the reticulocytes rose to 40 per cent. Treatments were given daily for ten days, then on alternate days for twenty-eight days, and the red count rose to 4 million thirty-four days after treatment was begun. The oral extract was given for twelve days. His count was followed for a month after the injections were stopped, and remained in the four millions. He was seen seven months later, at which time his count was 4.9 million, with hemoglobin 78 per cent. He stated that he had eaten liver "about once a week."

Case 9.—S. J., aged sixty-two. This case is of especial interest because we have the details of the treatment through two relapses, first with oral extract and second with intramuscular. The patient was first seen in September, 1929, with a history of weakness and gastro-intestinal upsets for the past year. He was a fairly well nourished man, acutely ill with marked pallor of skin. The examination was essentially negative excepting for pitting edema of the ankles; no sensory changes were found, and the reflexes were intact. The counts were as follows:

Date	RBC	Reticulo- cytes	Hb	WBC	Treatment
9-25-29	0.9		24%	2500	Transfusion 500 c.c.
9-27-29	1.1		30		240 gms. domestic
9-30-29	1.1	25%	30	5200	extract daily
10- 1-29					Transfusion 500 c.c.
10- 5-29	2.0	40	45		
10- 7-29	2.0	25	52	4000	Continuing extract
11-15-29	4.0		61	5300	daily
12-20-29	4.3		64		
3-26-30	5.5		90		

He was not seen again until December 7, 1931, when it was found that he had not been taking his liver extract regularly for a period of ten months because of difficulty in preparing it, especially during the hot summer months, and the taste had become noxious to him.

Date	RBC	Reticulo- cytes	Hb	WBC	Treatment
12- 7-31	1.5		30%	5300	100 gm. intramuscu-
12-12-31	1.6	5%	32		larly each visit
12-16-31	1.6	10	36		(5 c.c.)
12-19-31	2.0	25	39		
12-26-31	2.4		43		
1- 9-32	2.8		55		
1-15-32	3.6		60		
1-22-32	3.7		66		
1-29-32	3.9		66		
3- 4-32	5.4		80		
3-28-32	5.7		82		

COMMENT

The injection of liver extract is a highly efficient method of treatment of pernicious anemia. It should replace transfusions unless the patient is in extremis. It is especially valuable in cases with pathological or functional disorders of the gastro-intestinal tract which render uncertain the absorption of oral substances. It is useful for patients who object to oral preparations, and it can be made cheaper to the patient than treatment by mouth. The principal argument in favor of parenteral administration is the fact that liver extract is 30 to 50 times as potent when injected as when given by mouth. If the doses given to any of the above cited cases be added up, and compared to the amount of liver or extract given orally for a corresponding length of time in the average case, a very striking difference will be noted. With the increasing number of patients with primary anemia requiring treatment, this may be an important factor in making the supply of liver meet the demand.

Whether the extract is given intravenously or intramuscularly does not matter, so far as effectiveness is concerned. With the products made in this country it is difficult to give enough intravenously without causing reactions, unless frequent small injections are used. The highly purified English product overcomes this difficulty. The new concentrated extract brought out recently by Lederle may be given intramuscularly with very little local reaction.

Dosage.—With our increasing knowledge of substances effective in the treatment of primary anemia we are tending more and more toward a mathematical attitude in our therapy. Riddle¹⁰ has an arithmetical formula for predicting the reticulocyte response to treatment at any red-cell level, and it seems probable that most patients will respond to uniform doses in a uniform fashion when they are in relapse. Many authorities have gone farther and outlined doses for remission as well as relapse. Wilkinson¹² recommends 1 to 1.5 ounces of desiccated hog stomach for relapse and $\frac{3}{4}$ ounce daily for maintenance. Connor⁶ advises 120 to 240 grams of stomach mucosa or its dried equivalent daily. Beebe and Lewis¹ give more leeway by dividing all patients into four groups according to severity and complications, the first group requiring the equivalent of 100 to 400 grams of liver daily, the other groups progressively more. Sturgis¹¹ recommends 5 to 6 vials of liver extract daily, or 10 grams of ventriculin daily for each million red count deficit until the count is normal, and for maintenance one-fourth pound of liver or 1 vial of liver extract three or four times weekly, or 1 vial of ventriculin daily.

These dicta do not take into account the spontaneous remissions that take place in pernicious anemia. Remissions and relapses were more apparent before liver therapy was discovered. Cabot² in analyzing 524 cases found that 296 had one complete remission, 118 had two remissions, 65 had three, 21 had four, 24 had five, lasting from three months to four years. He stated that six patients recovered completely. It seems doubtful whether we should treat patients during a remission beyond advising them to eat liver as frequently as they can conveniently, for we cannot assure them that they will not have a relapse unless we give them frequent injections or large amounts by mouth.

We have attempted to arrive at adequate dosage for relapses by two methods—minimal and maximal, frequent and infrequent intervals. In one case (Case 7) 100 grams was given intramuscularly at seven-day intervals for six doses, the count rising from 1.1 to 4.3 million in thirty-nine days. In Case 1, two 100-gram doses were given intravenously at thirty-day intervals, the count rising from 2.3 to 4.2 million in thirty-nine

days. So to date we are unable to draw any definite conclusions as to the minimal dosage required to bring about the maximal regeneration of the blood.

The answer to the problem of dosage seems to us to be found in making every patient an individual case. The situation is somewhat analogous to that found in diabetes, except that in pernicious anemia not only is every patient's requirement different from that of every other patient, but his needs for treatment fluctuate very markedly from time to time. Moreover, besides the rhythm of the disease we must consider the age of the patient, other conditions present, and even his social and mental status. There is little evidence that treatment improves spinal cord changes, but where symptoms are present we should be especially careful to keep the blood up to normal in an attempt to arrest the combined sclerosis.

It is impossible to treat pernicious anemia rationally without frequent blood counts. Patients and physicians must not forget that this is essentially a malignant disease, that it is still a frequent cause of death, and every effort must be made to keep patients under observation. It is hoped that the use of parenteral liver extract will help us to do so.

SUMMARY AND CONCLUSIONS

- 1. Nine cases of pernicious anemia treated with parenteral liver extract are presented.
- 2. Five were treated intravenously, four intramuscularly. All showed good response in blood regeneration. The two routes were not compared by giving identical doses, but

the extract seems to be approximately as active when given either way.

3. No real improvement in cord symptoms was demonstrated. Neither was there any progression while under treatment.

4. In two cases (Cases 6 and 8) there was rapid response to intramuscular treatment after moderate oral doses of extract had failed.

5. Treatment during remissions should be an individual problem in each case. Large or frequent treatments are not as a rule necessary, but every patient should have frequent blood counts.

6. Injection treatments are advocated because the active principle of liver extract is much more potent than when given by mouth, because the treatment is more accurate than oral administration, and because it tends to keep the patient in closer touch with the physician.

Experience since these cases were treated has led us to concur with other writers in feeling that the aim of treatment should be to maintain a five-million red count, and that this can usually be accomplished with injections equivalent to 100 grams every three to four weeks.

BIBLIOGRAPHY

- 1. Beebe and Lewis: *Am. Jour. Med. Sc.* (June), 1931.
- 2. Cabot: *Principles and Practice of Medicine*. Osler and McRae, 8th edition, p. 738.
- 3. Castle and Bowie: *Jour. A. M. A.*, 92:1830, 1928.
- 4. Castle and Taylor: *Jour. A. M. A.*, 96:1198 (Apr. 11), 1931.
- 5. Connery and Goldwater: *Jour. A. M. A.*, 98:1060 (Mar. 26), 1932.
- 6. Connor: *Jour. A. M. A.*, 96:500 (Feb. 14), 1931.
- 7. Gansslen, M.: *Klin. Wehnschr.*, 9:2099 (Nov. 8), 1930.
- 8. Murphy, Wm. P.: *Jour. A. M. A.*, 98:1051 (Mar. 26), 1932.
- 9. Poole and Foster: *Jour. A. M. A.*, 96:2187 (June 27), 1931.
- 10. Riddle: *Arch. Int. Med.*, (Sept.), 1930.
- 11. Sturgis: Address—Mich. State Med. Convention (Sept. 24), 1931.
- 12. Wilkinson: *Jour. A. M. A.*, 96:1634 (May 9), 1931.
- 13. Wilkinson: *Lancet*, 2:791 (Oct. 10), 1931.

COLPECTOMY

Harold E. Simon, Birmingham, Ala., gives the following indications for colpectomy: 1. Prolapse in the aged constitutes the most frequent indication for colpectomy. In old and debilitated women in whom a short intervention under local anesthesia alone is feasible, this operation offers a maximum chance for cure with little or no risk. 2. After hysterectomy the recurrence of prolapse with cystocele or rectocele, or both, is tremendously difficult to treat, especially in older patients, or, when other perineal operations have been performed unsuccessfully previous to hysterectomy, the anatomic structures are so distorted and inadequate that any operation less certain than colpectomy to result in cure would be inadvisable. 3. Recurrences after the Watkins-Wertheim interposition operation for prolapse and cystocele may sometimes be best handled by hysterectomy and colpectomy. 4. When vaginal hernia recurs after hysterectomy, when intra-abdominal operations are contraindicated owing to the age of the patient

or for other reasons and the hernial defect is too great to be repaired by conservative vaginal procedures, or when the hernia is large and is a part of an extensive prolapse, total or partial colpectomy after ligation of the sac is often the procedure of choice or the only alternative that offers a reasonable prospect of cure. 5. When vaginal hysterectomy is performed for prolapse and efficient reconstruction of the perineum is impossible and if there is insufficient contraindication to vaginal obliteration, colpectomy as an adjunct is preferable to a perineal reconstruction which would offer little prospect of permanent cure. 6. When effective repair cannot be accomplished in prolapse in nulliparous women or after the failure of conservative surgical procedures, colpectomy may be necessary. 7. Modern methods of handling intractable vesicovaginal fistulas preclude the necessity for colpectomy. 8. In vaginal neoplasm when its surgical treatment involves an extensive denudation of the vagina, complete or partial colpectomy may be useful.—*Journal A. M. A.*

FUNCTIONAL DISORDERS OF THE COLON*

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The organic disturbances of the colon—new growths, different types of ulcerative colitis, catarrhal or infective colitis, appendicitis, and obstructive lesions other than those coming under the head of new growths—are reasonably sure of diagnosis by our present day methods and need not be confused with those functional disorders of the large bowel, which drive those so afflicted from one physician to another and all too frequently into the hands of the irregular practitioner or food faddist.

Aside from the organic causes of colon disturbances which are not treated in this paper, probably the most common cause of functional disorders of the colon is the spastic or irritable colon. There are no symptoms of inflammation of the mucosa with this condition and if a pathological examination were made, no abnormality or pathological lesion of the colon could be discovered; nevertheless, it is probably the most troublesome type of colon trouble to relieve that we encounter, as the causes are numerous and usually located outside the colon itself. I do not wish to treat the condition as a pathological entity but rather as the source of abdominal pain which is frequently so disturbing to the patient.

The literature on the subject has naturally been on the increase and contains discussions by the following authors: Hurst,⁴ among others, calls attention to the fact that a diagnosis of colitis is often made to explain functional symptoms, and that much time and money are spent on vaccines, intestinal douches and visits to spas, when nothing more than "a little judicious psychotherapy" is needed. He further states that the condition badly described as muco-membranous colitis is analogous with asthma—just as over-activity of the vagus leads to spasm of the bronchial muscles and excessive secretion of mucus by the bronchial mucous membrane, so "muco-membranous colitis, as it should be called, may be complicated by a mild form of true colitis as a result of daily irritation by injudicious local treatment."

Ryle⁸ observes that the variety of colonic pain found in the spastic colon is a function of the musculature of the visceral wall, and depends in part upon an inherent neuromuscular irritability associated with particular constitutional types; that aggravating factors include cold, fatigue, worry, consti-

pation, purgatives, exercise and tobacco. He concludes that spastic colon must be included in the category of "visceral neuroses," because of its association with certain physical and psychological types, its intermittent behavior, its aggravation by circumstances which depress or harass the higher centers, and the absence of all evidence of an associated organic lesion.

Eve,² under the analogy of traffic regulation, attempts to simplify and give a working conception of the protean disorder of chronic abdominal pain occurring intermittently. The variety of the pain depends upon the sphincter or sphincters in fault which are compared with traffic "robots" that get stuck at red, so that the traffic is obstructed and pain results.

Kruse⁷ regards the psychological or nervous factor, and physical fatigue as the "two great essentials" in this condition, stating that these patients must be taught that they can obtain relief by acquiring the proper mental balance and right psychological attitude toward their problems. Clark¹ believes that the commonest cause of the irritable colon is worry, and its prevalence is due to the fact that few people are immune from the worry habit. He says: "It is our custom to head every record of advice to the patient following the diagnosis of this disease, with the words, Avoid worry; break hurry habits."

Kantor⁶ introduces the term "unstable colon" in preference to "irritable" colon, to emphasize the fact that the same colon may show at various times, or in various parts at the same time, delay or hypermotility, atony or spasm. This term includes both the irritable and sluggish types, as well as the syndrome of alternating constipation and diarrhea. He concludes that the nervous causes

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of colonic instability probably include disturbances of the psychic sphere as well as imbalance of the autonomic system. The diagnosis of colonic instability is readily made by the x-ray nine-hour observation.

Jordan⁵ writes on the relation of neurosis to the unstable colon and states that the fundamental factor in the condition is "an imbalance between the nervous and the muscular apparatus of the colon which results in a disturbance in its mechanical, and, to a lesser degree, its secretory functions, an imbalance that comes to the consciousness of the individual by various symptoms." Hunter³ considers that the general nervous make-up of the patient is the prominent factor in spastic colitis, the colon merely bearing the brunt of the nervous instability.

There are numerous factors in the causation of the condition diagnosed as spastic colon. Primarily it is a symptom of an unstable nervous condition, an imbalance of the parasympathetics and sympathetics in the innervation of the colon. With an overstimulation of the parasympathetics, we are apt to have a rapid emptying of the stomach and small intestine, and also of the colon. On the other hand, we frequently observe a chronic spasm of the distal colon or at least of the pelvic colon, with a resulting constipation. With an overstimulation of the sympathetics we may have just the opposite condition, megacolon.

In the greater number of cases the patient is ignorant of the specific cause of his colon malfunction. It may follow some infection that leaves him in a weakened condition—many date their chronic illness or indisposition to an attack of flu or some similar disorder; or it may be the sequela of mental shock—the death of a member of the family, or some domestic or financial problem. It may be a concomitant of a definite organic disorder of some other part of the gastrointestinal tract, or some more distant organ. It is practically always present in physical disorders where there is introspection and anxiety on the part of the patient. It is questionable if a toxemia is responsible for this type of colon dysfunction.

The age incidence is interesting. The very young and very old are apparently immune, while the third and fourth decades of life are more definitely afflicted, the average age being 40 years. There is a definite familial tendency. It is frequently found in those of

higher education but is uncommon among the lower social classes, or the negro. It is more prevalent among women than men, probably in the proportion of 60 to 40. Women, confined to their homes with little diversion, are more prone to introspection, and a disturbed bowel function frequently becomes a phobia. The visceroptotic or physically unfit individual is prone to develop this condition. Were it limited to these groups only, it would not of so great importance, but since it seems to be increasing in frequency and is often a definite factor in causing physical incapacity, it demands more attention than it has hitherto received.

The outstanding symptom of a functionally disturbed colon is abdominal pain, often associated with tenderness along some portion of the colon, usually the pelvic colon. Because of pain and tenderness in the right lower quadrant, the appendix is too frequently condemned, although at operation it is found free from pathology and the symptoms persist, possibly in a more acute form, following appendectomy. The patient may be unable to definitely locate the pain, referring it at times to the lower abdomen and at other times to the epigastrium. In some cases the pain is complained of only early in the morning and may be relieved when the bowels are evacuated; in other cases it simulates the pain of peptic ulcer and biliary tract disorders.

Constipation is the next symptom in order of frequency and may be so severe at times as to amount to obstipation. The caliber of the stool is practically always abnormal—lead-pencil or ribbon-like stools, scybala, or entirely unformed. The abdominal pain and discomfort are always aggravated by the use of cathartics. An excess of intestinal gas is practically always complained of and when the fecal mass is held in the distal colon, the absorption of gas seems to be lessened; hence, with an increased amount of gas in the lower bowel there is much greater discomfort. This can be definitely demonstrated by the use of a small enema which relieves an accumulation of feces in the rectum with complete relief of the gas for a time. Accompanying these abdominal symptoms there are numerous general symptoms such as nausea, asthenia, headache, lack of appetite, insomnia, etc. There are few conditions with so profuse symptoms as the spastic colon.

On physical examination the patient may exhibit a perfectly normal nutrition but in many cases the nutrition is below par inasmuch as the patient fears an aggravation of his symptoms if he takes sufficient food to maintain nutritive equilibrium. Examination of the abdomen reveals a palpable, sensitive pelvic colon—at times so sensitive that even light clothing causes marked discomfort—and frequently the cecum and ascending colon are involved, the whole colon being exquisitely tender. The sensitiveness may exist for a few days or it may persist for months. The cecum and ascending colon may also be contracted, but in my experience at least in all the chronic cases, it is dilated, probably the result of the chronic stasis due to the contracted pelvic colon. Practically all of these patients complain of a sense of abdominal distention even when it is impossible to determine an excess of gas, and whether this is due to definite distension or to a tense gut distended by feces, or to an abnormal sensitiveness, is a question. The passing of gas practically always gives temporary relief of the acute pain and distension. Constipation is the rule but there may be alternating constipation and diarrhea. In the majority of cases, no excess of mucus is noted but that the so-called mucous colitis is only a more aggravated form of the spastic colon is held by many authorities today.

There may be difficulty in arriving at a specific diagnosis. Keeping in mind the above mentioned symptoms, many of them so frequently associated with definite organic disease, it is often a question whether a specific diagnosis is permissible. A diagnosis of an intestinal neurosis would probably be more plausible. A functional colon trouble should not be diagnosed until the patient has been subjected to a thorough study, as there is danger of overlooking a diverticulosis or diverticulitis of the pelvic colon, or a malignancy at some other location, or some rare pathology of the omentum.

There has been a great advance in our knowledge of abdominal pathology requiring surgical intervention, but even yet the number of patients observed in large clinics, exhibiting a right lower quadrant scar without relief of symptoms, would indicate that we have not yet found it possible to differentiate between the spastic colon and the so-called chronic appendix, diseased gall bladder, or diseased pelvic organs. Less haste in exploring the abdomen might frequently re-

lieve both the surgeon and internist of embarrassment although I do not wish to condemn legitimate abdominal surgery. There is just as great danger in overlooking an organic lesion and making a diagnosis of a functional trouble, as is illustrated by the following cases which I have recently observed:

Case 1.—This patient, a man aged fifty-six, had complained of rather severe abdominal symptoms for three months. The pain was not unduly severe; at times it was cramping in character and at times there was a tendency to nausea. He was not obstinately constipated and stool was negative for blood and mucus. His appetite was very poor and he had lost twenty-five pounds in weight over a period of three months. He had been carefully studied and observed. The results of an x-ray series were not conclusive of an organic lesion and in the absence of definite organic findings a diagnosis of a functional disturbance or spastic colon was indicated. He did not respond to treatment and was later referred to the surgeon. At operation it was found that he was afflicted with a primary endothelioma of the omentum. It is very doubtful if a correct diagnosis was possible in this case without surgical exploration, and we should recognize that at times we may be unable to arrive at a positive and accurate diagnosis without the aid of the surgeon.

Case 2.—The diagnosis in this case was not so obscure. A man of about 45 years of age gave a history of a severe attack of diarrhea about a year previously, which came on suddenly and confined him to his bed for four or five days. Following the diarrhea he exhibited constipation with a great deal of intestinal gas. His physician made a diagnosis of colitis and treated him accordingly for a number of months. At the time he came under our observation, he was having several small loose stools daily; was very weak and had lost some thirty-five pounds in weight. Two x-ray series of the gastrointestinal tract had been made with a resulting diagnosis of spastic colon. The patient had supposedly had the best possible medical care, but apparently a very simple procedure had been overlooked. Our routine proctoscopic examination revealed a ring obstruction at the recto-sigmoid junction. Our x-ray series, made a few weeks after the preceding one, showed a lower sigmoid lesion with marked stasis. The diarrhea was apparently an effort on the part of the body to relieve the colon of excessive retention incident to the obstruction. In this case a diagnosis of a functional trouble very greatly lessened the patient's chance of complete recovery following surgical intervention. A patient exhibiting symptoms of colon dysfunction has not been properly studied without a proctoscopic examination. Inflamed hemorrhoids, cryptitis, and chronic rectal ulcers may reflexly cause a spasm of the sigmoid and are very disturbing to intestinal function. A malignancy in the lower sigmoid or lower rectum can often be promptly diagnosed by digital examination.

The prevalence of amebiasis due to infestation of the endameba histolytica further complicates our ability to make a correct diagnosis. A few weeks ago a man about forty years of age came to us stating that he had been experiencing a gastro-intestinal disturbance for some months. He had lost some fifteen pounds in weight; at times would have three or four loose stools during the day and had noticed a little blood in some of the stools. He had gone through the hands of several physicians who had

made a diagnosis of a functional intestinal disturbance. Our examination of the warm stool specimen revealed the presence of many *Endameba histolytica*, which definitely classified this as an organic colitis, ulcerative in character, secondary to the ameba infestation. Recent observations would indicate that amebic infection is much more general than we had previously supposed and it behooves us to be extremely careful in all examinations of patients with apparent functional colon disturbances lest we overlook this important finding.

It is essential that we recognize the rôle of the spastic colon as a cause of certain abdominal symptoms but we must not forget that it is in itself a functional disturbance secondary to a vagotonia and may be associated with definite organic trouble. Before making a diagnosis of a functional intestinal disturbance or a spastic colon, we should keep in mind that a very careful history is of the greatest importance, following which an orderly examination is imperative. A complete x-ray series of the gastro-intestinal tract, or at least a barium enema, is necessary to distinguish between functional and organic trouble. Furthermore, a careful examination of the feces is indicated; not a simple routine examination but a thorough study of the warm stool. Where the symptoms have persisted for a long time, months or years, and where careful and complete examinations do not warrant a diagnosis of organic trouble, we may be correct in making a diagnosis of an intestinal neurosis, or, in more specific terms, a spastic or irritable colon.

The therapy for a functional colon disturbance must of necessity vary more or less with each individual case and probably should be classed as symptomatic treatment. The first decision to be made is whether the patient should be treated in the home or in an institution. It is much more difficult to accomplish a cure in the home as the surroundings are apt to be unfavorable—improper food, no opportunity for relaxation, lack of sympathy, and criticism from members of the family, or an excess of sympathy, either condition tending to encourage the introspection and anxiety on the part of the patient. There are many advantages in institutional treatment: The daily program can be so arranged that the patient can be reasonably active without danger of over-fatigue; the diet can be prescribed and supervised; certain physical measures—hydrotherapy, massage—and pleasant diversions in the form of light games which enlist the patient's interest are invaluable. We must

keep in mind that the principal cause of the disturbance is no doubt an unstable nervous condition and if we treat the colon rather than the patient, we will probably fail in our efforts. He must be relieved of his fears, anxiety and introspection. Re-education along many lines is necessary in some, while others have only to be reassured relative to a feared organic condition; still others need domestic adjustments, and a great many, financial assistance.

The relief of the constipation attending these cases calls for real skill and patience. The use of cathartics has been found to be of little real value and may result in definite injury with an aggravation of the pain and tenderness which is so distressing in these cases. Bulky lubricants are usually well borne and are of definite value; agar emulsified with mineral oil, psyllium seed or the psyllium jelly have been of value in my hands. There are many preparations of this character on the market and there should be little difficulty in making a choice, though I would call attention to the fact that oil and agar preparations containing laxatives such as phenolphthalein are to be definitely condemned. The oil enema is of great value in encouraging a morning movement and should be tried in all severe cases. The colon irrigation has its advocates but in the spastic type I have found it to be of little value as a curative factor. Enemas at a temperature of 108-110° may tend to relax the enterospasm and may be used for temporary relief. Massage of the pelvic colon has not been found particularly valuable.

Diet is of great importance as the majority of these cases tend to develop malnutrition and secondary anemia of a mild type; therefore, a liberal bland diet of a high vitamin content is desirable. I emphasize a *bland diet* as many cases will not tolerate a diet of too much roughage. A normal individual may be helped by roughage but this is not the case with the patient suffering from a spastic colon or the so-called mucous colitis. I appreciate that this is a controversial point, but my experience is that a bland diet is imperative. The milk diet is very beneficial in cases where the weight is subnormal—beginning with three quarts of milk daily and gradually increasing up to six quarts, adding one or two drachms of milk sugar to each glass of milk. This is a convenient way to force-feed the patient, and when he is taking six quarts of milk,

with the added content of lactose, a gain in weight of from two to four pounds per week is noted. This regime practically always relieves the constipation and the lactose tends to change the intestinal flora, which may be advantageous. Should the bowels become too loose, the lactose may be reduced or dispensed with entirely. Hydrotherapy is of great value both as a tonic measure and as a means of relieving the abdominal pain. Diathermy applied to the pelvic colon may also be used advantageously.

Permit me to call your attention to the danger of over-emphasizing any particular form of treatment, lest the patient develop a neurosis along this line. These patients are inclined to "live for their bowels" and every effort must be made to interest them in other matters.

CONCLUSIONS

In considering functional disturbances of the colon, let us keep in mind that they may be the result of a variety of causes. They are more frequently found when no pathology of the gastro-intestinal tract can be discovered, but on the contrary they may be a concomitant of some definite pathology either in the digestive tract or some neighboring organ.

It is unwise to make a diagnosis of a functional intestinal disturbance or a spastic colon without such information as can be ascertained by a careful history, x-ray series of the gastro-intestinal tract or at least a barium enema, proctoscopic examination, and careful study of the warm stools.

The patient may develop a neurosis on the basis of a colon dysfunction which is apt to be an insurmountable barrier in providing permanent relief of his symptoms. While proper measures must be used for temporary relief of the distressing symptoms, we must recognize the necessity for relieving the anxiety and colon-consciousness of the patient; otherwise, he will promptly relapse into his former condition when he attempts to assume his normal life and plan his own program.

The great majority of these cases can be relieved, and the profession has a responsibility in this matter which they cannot disregard. It is not enough to classify the individual as a neurotic and lose interest in his welfare. He may find an irregular practitioner who is not too busy to listen to him and, by re-educating him along rational lines of living, may relieve his symptoms and restore him to a useful life.

REFERENCES

1. Clark, S. K.: The irritable or functional colon. *Canad. Jour. Med. & Surg.*, 71:82 (April), 1932.
2. Eve, F. C.: Disordered regulation of traffic in the gut. *Brit. Med Jour.*, p. 364 (March 4), 1933.
3. Hunter, C.: Spastic colon. *Canad. Med. Assn. Jour.*, 26:151 (Feb.), 1932.
4. Hurst, A. F.: The diagnosis and treatment of colitis. *Proc. Roy. Soc. Med.*, 20:367 (Feb.), 1927.
5. Jordan, S. M.: The unstable colon and neurosis. *Jour. A. M. A.*, 99:2235 (Dec. 31), 1932.
6. Kantor, J. L.: The unstable colon. *Southern Med. Jour.*, 25:29 (Jan.), 1932.
7. Kruse, F. H.: Functional disorders of the colon. *California & West. Med.* (Aug.), 1933.
8. Ryle, J. A.: Observations on colonic pain. *Guy's Hosp. Rep.*: 79395 (Oct.), 1929. Chronic spasmodic affections of the colon. *Lancet*, 215:1115 (Dec. 1), 1928. The study of symptoms. *Lancet*, 220:737 (April 4), 1931.

THE IMPORTANCE OF INTRODUCING PSYCHIATRY INTO THE GENERAL INTERNSHIP

Franklin G. Ebaugh, Denver, believes that psychiatry should be represented in the general internship as part of the basic preparation for the practice of medicine. Such participation of psychiatry in straight, rotating and mixed internships is now possible in most hospitals through: (1) combined clerkships and internships and service in state hospitals during the summer months, (2) active psychiatric consultation service in both ward and outpatient departments, (3) liaison work between the various departments, especially with medicine and pediatrics and (4) the allotment of definite time for psychiatry, preferably from two to four months in rotating schedules. There should be greater utilization of the well equipped psychopathic and state hospitals, where-by affiliated schedules can be developed for intern

training. At the present time less than one fourth of the 7,357 interns now in training have the benefit of psychiatric training. In general, these psychiatric services are well appreciated by the intern and accepted by the staff and administrators of these hospitals as an essential part of the basic training. Psychiatric training in the future should be considered as a requirement for licensure. This will be a great educational step forward in protecting the public from the quack and further emphasizing the importance of the psychologic aspect of all medicine as well as furthering greater cohesion and correlation between the various fields of medicine. Introducing psychiatry through the general internship will be a great impetus to the changes now taking place in undergraduate and graduate psychiatric teaching schedules. It should play a rôle in breaking down the tendency for immature specialization in various fields and in the acceptance of psychiatry as a fundamental phase of all medicine.—*Journal A. M. A.* (March 31, 1934).

OPERATIONS ON THE ORBIT*

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For the satisfactory performance of surgical operation about the orbit, attention must be directed to preservation of structures that do not need to be disturbed. The eyelids, together with the contents of the orbit, frequently are involved in pathologic changes that require surgical correction. Whereas the primary object of the operation may be removal of pathologic material, the avoidance of postoperative disfigurement and protection of adjacent organs may be very important. Eyelids that will open and close at will are necessary for the protection of a seeing eye, and every precaution should be observed against injury to the muscles of the lid and the ligaments in performing external operations on the sinuses or the deep orbital structures. Severe contractions often follow deep laceration or incisions producing disfigurement of the upper part of the face and annoying interference with seeing. These may be unavoidable if accidental mutilation has occurred, but should be avoided in surgical operation if careful planning of the procedure makes it possible.

The human orbit is remarkably uniform in size and shape after the age of fifteen years. The rim of the orbit is well formed at birth and provides protection to the eyes from pressure normal to delivery. During the first twelve years of life, the orbital outlet increases somewhat in size, and the rim assumes more solidity while the bones of the face are growing and the nasal accessory sinuses are developing.

The direction of the axes of the orbit changes during the entire growth period, and the orbits become further separated from each other by development of the ethmoid bones. In infancy the axes lie at an angle of about 115 degrees, the orbits looking laterally, although the eyes are situated close together due to the proximity of the medial orbital walls. The angle of the axes in the adult approaches 45 degrees, and the orbits look more nearly forward, the interpupillary distance having increased in proportion to the separation of the medial walls by growth of the ethmoid bones and the width of general facial development. The bony walls of the orbit are well formed in early youth. The paper plate of the medial

wall is only semirigid and yields to pressure, whereas the other walls soon become completely rigid and fixed in relation to one another. Frequently in aged patients, dehiscences from absorption occur in the roof of the orbit, leaving the periorbita in contact with the dura. This relation is of significance in exenteration of the orbit for any cause, and may explain the occurrence of meningitis or abscess of the brain in some suppurative diseases of the sinus accompanied by orbital periostitis or cellulitis.

Ethmoidal dehiscences are common, but the periorbita provides a barrier to the spread of infection and the lack of a complete bony wall is not of serious significance. Operations on the orbit by approach through the superior, nasal and inferior walls are rarely done, so the surgical significance of contour and consistence is negligible from that standpoint. Certain landmarks, however, are useful in orientation when gross pathologic changes produce marked distortion of the soft parts of the upper portion of the face.

The surgical anatomy of the orbit determines methods of operating for abscess, tumor or cyst; for repair of fractures, lacerations, or deformities, and for placement of prosthesis for cosmetic effect. The rim of the orbit is the outstanding landmark, and to it is attached the periorbita and the anterior extension of the fascial sheaths of connective tissue, and of Tenon's capsule. Posterior to the rim the orbit has a non-yielding wall of bone lined with periosteum, perforated by nerves and blood vessels that are somewhat protected from pressure by being situated in fissures or sinuses covered by semi-elastic membranes. Anterior to the rim, the fascial ligament, the globe and lid form an elastic and distensible wall, capable of considerable resistance, even in case of

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paralysis of the orbicularis muscle, to pressure from behind such as occurs in cellulitis, abscess and tumor. The periorbita is, for the most part, easily detachable so that there is a potential space between it and the bone. It is firmly attached at the rim of the orbit, where it becomes continuous with the periosteum covering the bones of the face. At the apex it is closely adherent to the sheaths and upper part of the optic nerves. It is firmly fixed at the lacrimal fossa, the sutures and various fissures and foramina.

Subperiosteal abscess may occur at any place along the orbital wall, but the situation of the abscess may not be identical with that of the initial lesion. The most common cause of subperiosteal abscess is periostitis about the margin of the orbit, and disease of the paranasal sinuses. Abscesses situated anteriorly cause swelling near the morbid process and are easily drained by incision through the lids at the most dependent portion. Posterior abscesses, however, are more likely to be formed where there is the greatest distensible subperiosteal space; that is, along the superior and nasal walls. The globe is protruded forward and usually is immobile; the lids are swollen and cannot be opened; the conjunctiva is chemotic and protrudes between the lids. The pus spreads diffusely behind the rim, producing marked bulging of all the soft tissues and the globe. In cases of frank sinus disease, an intranasal operation may evacuate the pus, but this is not always possible. It then becomes necessary to drain the pus through an incision into the orbit. The point to make the incision is just beneath the brow, through the lid, to the rim of the orbit, lateral to the supra-orbital notch. The incision should be parallel with the orbital margin and large enough to permit instrumental exploration of the cavity of the abscess. The advantages of making the incision at this point are: (1) The wall of the abscess cavity lies nearest the surface at the upper rim, and maximal facilities for drainage are present; (2) there are no important nerves, vessels, or ligaments to be cut; (3) after healing there will be a minimal amount of deformity from contraction of the scar, and (4) the globe and soft tissues of the orbit are least exposed to infection through contamination.

Inside the periorbita is the space bounded by the cone of muscles, the intermuscular membrane and the capsule of Tenon. Abscesses within the cone or between the cone

and the periorbita are more easily evacuated by incisions through the conjunctiva, and may be missed by exploration through an incision as described for extraperiorbital abscess. Exploration of the orbit in sinus disease in children, when there is marked proptosis and swelling of the conjunctiva and lids, is notoriously futile. Cellulitis from a small lesion is often proportionally greater than in the adult. The sinuses in children are quite small or undeveloped, the walls thin, and the soft tissues of the orbit nearer the source of inflammation. The orbit is shallow and the outlet large, factors which permit distention with little injury. As a rule, cellulitis in children should be treated expectantly, and exploration deferred until abscess formation is quite evident and definite signs of pointing appear. Incision through the lower lid should always be avoided if possible in children as well as adults, because of the subsequent deformity due to scars which become adherent to the lower rim of the orbit, pulling the lid downward and fixing it against normal mobility.

The main blood supply to the orbit is provided by the ophthalmic artery and its branches, many of which anastomose freely with other vessels from the internal and external carotid arteries. Arteriovenous aneurysm occurs at the cavernous sinus, giving rise to passive congestion of the orbit and distention of the eyelids. Cavernous hemangiomas of the orbit sometimes cause swelling and congestion similar to that produced by aneurysm, and may so closely simulate that condition that differentiation is difficult. Due to the abundant blood supply, most of the soft tumors of the orbit are well nourished and many of them grow rather rapidly. The blood vessels that supply these tumors may become large enough to carry a distinct pulsation, thus more closely simulating aneurysm by producing thrill and bruit. The most common extrabulbar tumor of the orbit, some form of hemangioma, may become one of the most difficult to diagnose and to remove. When determination of the extent and character of a highly vascular orbital tumor is doubtful, preliminary ligation of the internal carotid artery provides a factor of safety for orbital exploration that should not be ignored. If ligation is not done as a preliminary measure, and should uncontrollable hemorrhage be encountered, one should be prepared to ligate one or both carotid arteries.

Tumors of the orbit may be primary in the soft tissues of the orbit; secondary tumors invade the orbit from adjacent regions, such as epitheliomas primary in the lids, tumors arising in the nasal accessory sinuses, or metastatic, blood or lymph-borne tumors from primary neoplasms elsewhere. There is a wide variety of primary tumors, the most common being hemangiomas, sarcomas, and carcinomas. The more malignant, invasive type usually grow rapidly and require radical treatment. Exenteration of the orbit followed by radium usually is effective if done before the disease extends beyond the walls of the orbit. Exenteration of the orbit may be total or subtotal, depending on the extent of involvement of the lids. If the lids are involved, as in primary carcinoma which has invaded the orbit, the excised tissue should include the lids and a margin of healthy tissue about 1 cm. beyond the apparent margin of the tumor. The periorbita should be elevated in the rim of the orbit and the entire content of the orbit removed as cleanly as possible. If the lids are not involved, the skin should be preserved to be reflected back on the orbital walls, but the margins of the lids, tarsal plates and conjunctiva should be taken away with the content of the orbit. Incision should be made through the skin at the margin of the lids, and the skin dissected back beyond the tarsus. The tarsal plate, margin of the lid, and cilia cannot be used for plastic repair after exenteration and must be sacrificed. After exenteration for malignancy, the orbit should be kept loosely packed with vaseline-iodoform gauze and the walls allowed to granulate for several weeks before an attempt is made to cover the granulated surface with skin flaps. If the medial wall has been perforated, openings into the nasal cavity will be permanently lined with extension of the nasal mucous membrane, over which skin grafts can be placed only with difficulty.

Most of the tumors of the orbit, however, particularly the primary ones, are innocent growths that push the tissue aside and are usually encapsulated. The character of the tumor will depend on the tissue of origin, but its situation within the orbit frequently is determined by the path of least resistance. Tumors of the optic nerve and its sheath are, of necessity, confined to the posterior portion of the orbit and seldom protrude far enough forward to be felt through the outlet. Tumors that are not so firmly attached to the structures, even though they

arise in the posterior part of the orbit, may work their way forward, pushing aside the globe until they can be felt. Retrobulbar tumors may grow to be 2 cm. in diameter before producing appreciable proptosis. As the tumors increase in size the globe is pushed forward, not in steady, slow progression, but by stages, as the tumor fills less resistant parts of the orbit. Proptosis of a few millimeters may occur within a few days, and further advancement of the globe will not take place for several months. I have every reason to believe, however, that the tumor causing the proptosis continues to increase in size gradually, although in areas in which it does not press the globe forward. It is not possible to determine the duration of a tumor by the onset of proptosis, nor can the rate of growth of a tumor be determined by the rate of progress of proptosis. Although lateral displacement of the eye that is proptosed, in reference to the rim of the orbit, may be a guide as to the situation of the tumor within the orbit, the point at which the tumor originated cannot be so determined. The method of approach in operating on retrobulbar tumors, therefore, should allow considerable latitude for digital exploration with the minimal amount of trauma. The preferred operation is as follows: An incision is made just below the brow and parallel to its lower margin of the orbit from the superior nasal angle of the orbit to the frontozygomatic suture on the temporal wall. The incision should be carried to the bone, 4 to 6 mm. above the margin of the orbit. Along this line, the periosteum should be incised and separated from the bone around the orbital rim, with a blunt periosteal separator, such as is used in resecting submucous nasal septums. The periorbita may easily be separated from the nasal wall, the roof of the orbit, and a portion of the lateral wall, the main points of resistance being in the lacrimal fossa and the posterior orbital fissure. Before the periorbita is opened, a finger should be inserted into the wound and the content of the orbit palpated from above. The situation of the tumor can then be determined and the periorbita opened immediately over it. The periorbita should be opened behind its attachment at the rim of the orbit and in a sagittal direction. If it is necessary to incise the periorbita to the anterior margin, the edges should be carefully marked with sutures so that they may be properly reunited. Resection of the tumor may be carried out from this

point with little trauma and interference from orbital fat, and sufficient room will be provided for proper handling of all instruments. After removing the tumor, the incision of the periorbita is united with catgut, the periosteum resutured above the orbital margin, and the wound in the skin closed without drainage. Dressings are applied under moderate pressure.

For the removal of tumors of the optic nerve and sheath in the posterior part of the orbit, or tumors that lie in the nasal inferior quadrant, other methods of approach must be employed. The Krönlein operation need be employed only for tumors of the nerve and its sheath or for those situated in the posterior inferior portion of the orbit. The Krönlein operation is rarely necessary, is more difficult, and usually is followed by more deformity than the operation described. Tumors that occur in the nasal inferior quadrant of the orbit should be removed through the palpebral fissure. Canthotomy may be done if necessary. Incision should be carried through the lower cul-de-sac of the conjunctiva to the rim of the orbit, the globe pushed to the lateral side, and the tumor resected. If the conjunctiva is properly approximated, the operation will not be followed by entropion. Adhesions between the skin and the lower margin of the bone of the orbit may be avoided, whereas if the incision is made through the skin parallel to the rim of the orbit, deformity of the lid and disfiguring scars will persist.

Enucleation of the eye is frequently followed by retracted sockets that are not suitable for artificial eyes. A great variety of substitutes for enucleation have been described and commonly practiced when it is desirable to provide a firm bed for prosthesis. The method of providing an anterior covering for the prosthesis is important. In enucleating the globe, all the bulbar conjunctiva should be saved by incision close to the limbus. The conjunctiva should be separated from the anterior half of the globe by a blunt hook. The tendons of the ocular muscles should be severed close to the globe and Tenon's capsule separated from the sclera without mutilation. Satisfactory prosthesis is a lead-free glass ball, 22 mm. in diameter. This should be inserted into

Tenon's capsule and covered by two layers of the capsule, folded over the opening in the form of envelope flaps, and fastened with catgut sutures. The conjunctiva should be closed by a running suture in a line parallel with the palpebral fissure, so as to allow deep retraction at the internal and external canthi. An artificial eye may be fitted immediately or after healing is completed.

Late marsupialization is also employed to improve the bed for an artificial eye in cases of retracted sockets. A horizontal incision through the conjunctiva, about the median line of the posterior wall of the socket, should be extended deeply into the orbit, and an attempt should be made to enlarge the socket, well posterior, so that anterior flaps may be fashioned to cover an inserted prosthesis. For delayed marsupialization carbonized animal bone is preferable to glass or metal spheres, as it is less likely to be extruded. The use of fat, muscle, fascia, or fresh bone has been advocated but, I believe, is less satisfactory because of the inability to estimate the amount of absorption that will follow implantation. I have known of two instances of occurrence of malignant neoplasm in implanted tissue in sockets in which neoplasm did not exist before. I have discontinued entirely the use of autogenous tissue implants.

DISCUSSION

F. B. FRALICK (Ann Arbor): Dr. Benedict's interesting paper presents a scholarly summary of operations on the orbit—particularly in regard to the removal of the orbital tumors of which he has made a noteworthy contribution to the ophthalmic literature. Of evisceration of the globe Dr. Benedict makes no mention. It is true that it has been frowned upon by many ophthalmic surgeons because of the reported cases of sympathetic ophthalmia following this procedure. In 1908 Harold Gifford collected the reports of twenty-seven cases of sympathetic ophthalmia following evisceration and found that the majority of the cases of sympathetic ophthalmia reported as appearing after evisceration have been found to be due to choroidal remnants left in the eviscerated capsule. We have all seen sympathetic ophthalmia develop in the fellow eye even months after enucleation of the injured eye, so that neither method is free from this complication. I feel that a carefully performed evisceration in selected cases is the operation of choice because the freely movable stump is even better than that usually obtained by glass ball implant. It is, however, no fitting operation to be performed by the careless operator who is liable to leave uveal tissue in the globe.

CHRONIC SUBDURAL HEMATOMA COMPLICATING SEVERE BRAIN INJURY

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Chronic subdural hematoma may be defined as a traumatic collection of blood or its products between the dura and arachnoid membranes of the cranium. Depending upon chronicity there is a membrane of varying thickness externally and a very thin membrane (adjacent to the arachnoid) internally.

As a rule a history of trauma is obtained in the majority of the cases. Usually however, this trauma is insignificant and not incapacitating at the time. That the condition may accompany severe brain injury, I feel is not sufficiently stressed. In such a case the chronic subdural hematoma becomes the important factor in causing a protracted illness and possible fatal termination if unrecognized. In the Receiving Hospital, where a large number of cases of acute cranio-cerebral injury are treated, the association of severe brain injury and chronic subdural hematoma is occasionally proved at operation. We have now come to suspect the condition in all cases of head injury who recover from the initial state of shock and brain damage and yet do not convalesce as usual and remain in a more or less stuporous condition, complaining of headache if sufficiently conscious. In such cases lumbar puncture with pressure determinations is always made. If the spinal fluid pressure is found to be high, exploratory trephine on both sides of the head in the parietal region is advised. These explorations have uncovered many a case of chronic subdural hematoma and I should next like to discuss a few case reports pertinent to the subject.

CASE REPORTS

Case 1.—Fall. Unconscious following accident. Eventual left third nerve paralysis. Linear fracture of left temporo-parietal. Bloody spinal fluid. Left sided chronic subdural hematoma. Complete recovery after operation.

L. G., aged forty-nine, entered the hospital in semi-conscious condition on October 10, 1933. Thirty-six hours before he was thrown out of a cab, falling on the head. He was taken home and remained unconscious for about twenty-four hours.

Examination.—The patient answered questions with difficulty and his speech was suggestive of aphasia. There was partial ptosis of the left upper lid (Fig. 1). The left pupil was slightly larger. Both pupils reacted to light. There was evident weakness in the right half of the body, more marked in the upper limb. The fundi were negative.

Laboratory Findings.—White count 12,200, blood Wassermann negative, urine negative, spinal fluid pressure 350 mm. Fluid contained red blood cells, spinal fluid Wassermann negative. X-ray examination showed a fine linear fracture of the left temporo-parietal region.

Pre-operative Course.—The patient remained in a more or less drowsy state until six days after ad-

mission, when he became worse. In a few days there was complete third nerve paralysis on the left side. The weakness of the right half of the body became more definite. On the basis of increased spinal fluid pressure and increase in drowsiness it was thought advisable to explore him for chronic subdural hematoma eight days after the accident.

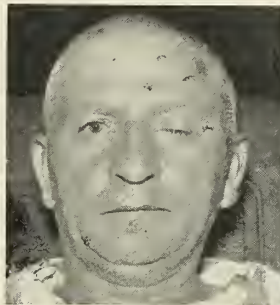


Fig. 1.



Fig. 2.

Operation.—Under general anesthesia a small opening was made in the left parietal region. The dura was blue in color because of underlying pathology. On incision of the dura about two ounces of dark red-brown fluid gushed out. The underlying brain looked normal. In view of the associated fracture and brain injury it was thought advisable to do a subtemporal decompression. When the dura was opened in the temporal region several pieces of clotted blood gushed out. The underlying brain in this region also looked normal.

Postoperative Course.—Patient was much better the following day. He was in the wheel chair on the eighth day. The third nerve palsy was completely gone four weeks after operation (Fig. 2).

COMMENT

This is an example of chronic subdural hematoma associated with a blow sufficiently severe to cause a fracture of the skull and bloody spinal fluid. It also suggests an accurate picture of the formation of subdural hematoma. Although the central portion of the clot had undergone liquefaction the portion covering the temporal region (or its peripheral margin) was still quite solid but it was jelly-like in appearance. There was a thin membrane of clotted material immedi-

ately under the dura covering the fluid portion of the clot, but this was quite soft and had not undergone the fibrosis which is so characteristic of the outer covering of chronic subdural hematoma. In the process of organization undoubtedly the dura contributes much of the necessary elements, namely, blood supply and vascular proliferation.

Case 2.—Auto accident. Unconscious on entrance. Left sided hemiparesis slow in progress. Fracture right temporal region. Bloody spinal fluid. Right sided chronic subdural hematoma. Complete recovery after operation.

E. N., aged twenty-nine, entered the hospital on October 20, 1933, following an automobile accident. On entrance she was unconscious and remained so for several days.

Examination.—Right pupil was larger but this disappeared within twenty-four hours. Beginning the third day she showed evidences of weakness in the left half of the body.

Laboratory Findings.—On admission white count was 20,000. Blood Wassermann negative. Spinal fluid contained red blood cells, and two days before operation showed definite increase in pressure, with fluid gushing from the needle. Spinal fluid Wassermann was negative. There was fracture of the right temporal region.

Pre-operative Course.—She remained more or less drowsy with increasing weakness of the left half of the body. Spinal fluid at first was bloody but later cleared up. In view of the fact that the spinal fluid pressure was high and because of the increasing drowsiness and weakness in the left half of the body it was thought advisable to explore nine days after accident.

Operation.—A small opening was made in the right parietal region. The dura was definitely blue in color because of underlying pathology. When the dura was opened about two ounces of black-brown fluid escaped. After evacuating the contents of the subdural hematoma inspection of the brain underneath showed normal appearance. There was marked molding and "shoving" of the brain. A flat rubber was used to drain the cavity. Because the patient did not respond as expected, we thought it advisable to explore the left side and on finding no clot on this side a subtemporal decompression was performed.

Postoperative Course.—This was quite stormy and patient carried on for several weeks without appreciable recovery, but, being sufficiently well, she was transferred home and when seen about two months after admission she was feeling fine with no evidence of post-traumatic sequelæ, except for slight weakness of the left lower limb.

COMMENT

Here is another example of chronic subdural hematoma associated with fracture of the skull and bloody spinal fluid. The hematoma was on the same side as the fracture. The external wall of the subdural cyst was quite thin and broke easily. It was mostly made up of fibrinous exudate with organization. In both Cases 1 and 2 there was marked molding and "shoving" of the brain, so characteristic of the usual case of chronic

subdural hematoma coming to operation a month or more after accident.

Case 3.—Fall. Unconscious following accident. Restless and psychotic, necessitating restraint. Fracture of left temporo-parietal. Right chronic subdural hematoma. Recovery following operation.

J. O., aged forty-two, entered the hospital on December 10, 1933, in an unconscious state. There was a history of heavy drinking prior to a fall with the patient landing on his head.

Examination.—The right pupil was larger and fixed to light. This disappeared within the next twenty-four hours. There was bleeding from the left ear. There were no evidences of localized lesion until about three weeks after admission, when there appeared a suggestion of weakness in the left half of the body. The fundi showed no choking at any time.

Laboratory Findings.—Entrance white count was 13,200. Blood Wassermann was negative. Spinal fluid was at first bloody but later was clear. Spinal fluid pressure was between 400 and 450 two days before operation. X-rays showed fracture of the left temporo-parietal extending from base to vertex.

Pre-operative Course.—Patient never regained consciousness and about four or five days after admission was so restless that he had to be moved to an isolation ward and restrained. In view of the definite increase in the spinal fluid pressure and in view of a suggestion of weakness in the left half of the body it was thought advisable to explore the right subdural space. This was done twenty-six days after accident.

Operation.—Through a small trephine opening the dura was exposed in the right parietal region. It was blue due to underlying pathology. On opening the dura about three to four ounces of black-brown fluid escaped. The contents of the cyst were evacuated. A flat rubber was used for drainage. In view of the fact that the patient did not respond properly to this operation we thought it advisable to explore the left side also. A week after the first operation an opening was made in the left parietal region. On incising the dura it was evident that the membranes and the brain were adherent. A small piece of tissue was removed for biopsy.

Postoperative Course.—The patient had a stormy convalescence. He developed two pressure sores but eventually made a complete recovery and was discharged from the hospital about three months after entrance.

COMMENT

This is another example of chronic subdural hematoma complicating severe brain injury. The biopsy from the left parietal region showed evidences of chronic inflammation and deposits of blood pigment (pilarachnoiditis). Patient was suspected of having the hematoma because of the definite increase in the spinal fluid pressure. The hematoma in this case was on the right while the fracture of the skull was on the left side.

DISCUSSION

Chronic subdural hematoma is a well described clinical entity. There are numerous papers in the literature on the subject. Its

appearance in infants is well brought out by the contributions of Sherwood, Burhans and Gersterberger, Peet and Kahn and others. In this group the condition may be mistaken for hydrocephalus of childhood because of rapidly increasing size of the head although the patient does not show the characteristic behavior of a hydrocephalic child. In adult life the condition has been seen in all ages. The recent contributions of Putnam and Cushing, Grant, Gardner, Jelsma, Kaplan, McKenzie, Fleming and Jones, Dandy, and others have clarified most of the points in the diagnosis, etiology and treatment of this condition. Subdural hematoma is usually caused by slight trauma. Very often the history of trauma is forgotten. It is true that in the majority the onset of symptoms is evident two to six weeks after injury. However, the initial hemorrhage if sufficiently massive may cause extreme disability, coma and death within twenty-four hours after the accident. Such a case was treated by us and a short history is here given.

Smith, aged sixteen, a robust negro boy, was knocked out momentarily in professional boxing. Within three hours after the accident he was in deep coma. When seen four hours after the accident the right pupil was dilated. Spinal fluid was clear but tension was markedly increased. A pre-operative diagnosis of right middle meningeal hemorrhage was made. At operation no extradural clot was found but the dura was blue due to underlying clot. When the dura was opened much soft clot gushed out. After removing all of the blood clots from the surface of the right cerebral hemisphere the wound was closed in layers. In spite of all measures he died about eighteen hours after operation. At autopsy the hemorrhage was thought to come from a tear in a cerebral vein entering the sagittal sinus. There were no contusions of the brain and no fracture of the skull. In this case the hemorrhage was so massive and rapid that the patient did not have the usual latent period so common in chronic subdural hematoma. The microscopic findings suggested a beginning organization of the clot from the inner aspect of the dura.

That the condition can be associated with severe brain trauma and fracture of the skull is well brought out in the above described cases. All had fracture of the skull and bloody spinal fluid. In two cases the subdural hematoma was on the same side as the fracture of the skull and in one case it was on the opposite side. That in certain cases the localization of the pathology is quite difficult on the basis of clinical findings is an accepted fact but the fact that both parietal regions are explored obviates mistakes in diagnosis of localization.

It is possible that in some cases of brain

injury the associated subdural hematoma may remain sufficiently latent to allow discharge of the patient from the hospital in an improved condition, but on the other hand its presence can easily upset the balance and cause a fatal termination if unrecognized. The diagnostic features presented in the above cases were sufficiently uniform to discuss.

1. All had protracted illness with a tendency toward increasing severity.
2. The spinal fluid pressure was definitely increased (over 300 mm.). However, other evidences of increased intracranial pressure such as choked discs and headaches were not noted (the latter symptom because of uncoöperative state of patients).
3. Undoubtedly, choked disks may appear in such cases.

The problem of localization was quite simple in one case because of a third nerve paralysis on the same side. In the other two there were evidences of hemiparesis suggesting accurate localization; however, I am cognizant of the fact that in cases of subdural hematoma in general the only accurate way to rule out the condition is bilateral exploration.

The operative approach in these cases (as in all other cases of subdural hematoma) is drainage of the subdural contents through small trephine openings as suggested by Rand, McKenzie, Fleming and Jones and others. This is simple in execution and conserves the patient. The results are excellent. Usually we drain the subdural space with a flat rubber drain which is removed within twenty-four to forty-eight hours. Subtemporal decompression may be performed to help the associated brain damage and increased intracranial pressure in cases with severe brain trauma.

SUMMARY

1. Skull fracture with severe brain injury may be associated with subdural hematoma. This is the case frequently enough to cause one to suspect the condition.

2. In such cases patients have a protracted illness which would frequently end fatally if the condition is unrecognized.

3. In the presence of protracted illness due to severe head injury the presence of increased pressure of spinal fluid should make one suspect associated chronic subdural hematoma. Bilateral exploration in such cases through small trephine openings is sane surgery.

BIBLIOGRAPHY

1. Burhans, C. W., and Gerstenberger, H. J.: *Jour. A. M. A.*, 80:604, 1923.
2. Dandy, W. E.: *Lewis' Loose-Leaf Practice of Surgery*, XII:295. Baltimore: Prior Co., 1932. *Jour. A. M. A.*, 101:772, 1933.
3. Fleming, H. W., and Jones, O. W.: *Surg., Gynec. & Obstet.*, 54:81, 1932.
4. Gardner, W. J.: *Arch. Neur. Psychiat.*, 27:847, 1932.
5. Grant, F. C.: *Annals Surg.*, 86:485, 1927.
6. Kaplan, A.: *Brain*, 54:430, 1931.
7. McKenzie, K. G.: *Can. Med. Assn. Jour.*, 26:534, 1932.
8. Peet, M. M., and Kahn, E. A.: *Jour. A. M. A.*, 98: 1851, 1932.
9. Putnam, T. J., and Cushing, H.: *Arch. Surg.*, 11:329, 1925.
10. Rand, C. W.: *Arch. Surg.*, 14:1136, 1927.
11. Sherwood, D.: *Am. Jour. Dis. Children*, 39:980, 1930.

PHYSICIANS WITHOUT THE DEGREE "M.D."

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The serious investigator of mundane endeavors who carefully analyzes that conglomerate achievement of the human mind, "Modern Medicine," will find, as he distills its various components, reflecting before him the brilliant images of anatomy, physiology, physics, the natural sciences, chemistry and finally bacteriology and psychiatry, all surrounded by lesser images of man's devious pursuits and all imbedded in a lustrous foundation of thought and observation.

For modern medicine is no single science but one of the broad milky ways upon which the various sciences reflect their light.

Small wonder is it then that many of the great discoveries both leading us to modern medicine and in modern medicine have been made not alone by the bearers of the title "Doctoris In Arte Medica," but often by devotees of the various sciences mentioned and by untitled probers of human thought and behavior.

It is impossible here to even attempt to tell of all of the contributions to medicine by non-physicians; merely naming these would fill a volume. But we hope to show the debt of modern science to its component sciences by brief mention of some major advancers of medicine, most of whose work you know, but many of whom you may not have realized were not physicians.

We might start with the authors of a very famous book and with the book itself, "The Bible"—few think of it as a teacher of medicine but it represents an early force in medicine even though spread under the dictum of religion. Its vast influence in spreading and enforcing the knowledge of that time in preventative medicine, in contagion and in eugenics was undoubtedly greater indirectly than that of any physician; and in spite of many fallacious ideas undoubtedly of much value medically.

Surely a few lines from Leviticus, "The Third Book of Moses," will convey that here was some understanding of contagion and an early attempt to enforce, in religious guise, preventative medicine by religious leaders rather than physicians.

In Leviticus, Chapter 13, we read: "When a man shall have in the skin of his flesh a rising, a scab, or bright spot, and it be in the skin of his flesh like the plague of leprosy; then he shall be brought unto Aaron the priest or unto one of his sons the priests." The next paragraph deals with the methods of the priests in determining whether the individual has leprosy.

And in paragraph 46: "All the days wherein the plague shall be in him he shall be defiled; he is unclean; he shall dwell alone; without the camp shall his habitation be."

And further: "He shall therefore burn that garment, whether warp or woof, in woolen or in linen, or anything of skin, wherein the plague is; for it is a fretting leprosy; it shall be burnt in the fire."

And again: "Then the priest shall come and look, and behold, if the plague be spread in the house, it is a fretting leprosy in the house: it is unclean. And he shall break down the house, the stones of it; and the timber thereof, and all the mortar of the house and he shall carry them forth out of the city into an unclean place."

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And in Chapter 15, we read an injunction on infectious diseases of some etiology apparently other than leprosy. "And the Lord spake unto Moses and to Aaron saying, Speak unto the children of Isreal and say unto them, when any man has a running issue out of his flesh because of his issue he is unclean. Every bed, whereon he lieth and hath the issue is unclean; and everything where on he sitteth, shall be unclean."

"And when he that hath an issue is cleansed of his issue; then he shall number to himself seven days for his cleansing, and wash his clothes, and bathe his flesh in running water, and shall be clean."

Some may question the exact ailment the above refers to but its medical aspect as regards contagion seems clear.

We read in Chapter 18: "None of you shall approach to any that is near of kin to him, to uncover their nakedness. Thou shalt not lie with mankind as with woman-kind; it is abomination. Neither shalt thou lie with any beast to defile thyself therewith; neither shall any woman stand before a beast to lie down thereto; it is confusion." Here is definitely an attempt to condemn abnormal sexual relationships.

And in Chapter 19, an understanding of food spoilage is hinted at for we read: "And if ye offer a sacrifice of peace offerings unto the Lord, ye shall offer it at your own will. It shall be eaten the same day ye offer it, and on the morrow; and if ought remain on the third day, it shall be burnt in the fire. And if it be eaten on the third day, it is abominable; it shall not be accepted."

The Jewish Dietary or Kosher laws are also an example of an attempt to instill proper food habits and were undoubtedly based upon what appeared at that time rules essential to health, though today many of them have no significance.

From the early pre-biblical days and biblical days up to the 17th century the advancement of medicine was a divorcement from ecclesiastical and philosophical mystery, and a development of clinical understanding, but most of this was done by men practicing the physician's calling

But in Delft, Holland, in 1632, was born Antonius Leeuwenhoek, whose position in life varies with different authors, from small merchant to city hall janitor, to that of a gentleman of leisure. Be that as it may, his spare time and perhaps we might

secretly think most of his time, was devoted to the making of lenses and microscopes and peering gluttonously at anything that might portray some unknown vision under his lens. Here was not the theorizer, or contemplative analyzer, but the restless incessant observer who had to see to believe.

But even this patient, laborious worker must have bubbled with joy when for the first time in some rain water he revealed by the aid of his improved microscope that there were small beasts invisible to the naked eye. A constant barrage of correspondence between himself and the Royal Society of England followed his discovery of "animaliculæ." He described the various bacterial groups; namely the coccus, the streptococcus, the staphylococcus, the bacillus and the spirillum; but their vast influence over our lives appeared to be in no way apparent either to him nor to the austere and learned gentlemen of the Royal Society of England.

His development of the microscope and his discovery of microscopic forms of life were surely the foundation for the later great discoveries of medicine. We must, however, somewhat criticise him, for his best microscope he stated he would never let anyone use or see; teach his methods, he would not; and, blasphemy of blasphemies, he had a contempt for physicians, who, knowing nothing of the microscopic details of the body as he did, were certainly impotent, in his estimation, to treat mankind.

Not long afterward far to the south of Leeuwenhoek's Holland, in northern Italy in 1729 was born Lazzaro Spallanzani. But here was no tedious, even though great, one-track mind, but a combination of poet, philosopher, mathematician and scientist who must needs secure his freedom of scientific doubt and probing by the security of becoming ordained Priest.

Even the most erudite and greatest scientists in those days believed in spontaneous generation; but the doubting mind of Spallanzani was not satisfied to doubt—not to have an answer one way or the other that could be proven. By the use of small flasks of nutritive soup and the ingenious, even though it be commonplace to us now, method of boiling them and keeping a number sealed from the air and a number unsealed, he convinced a skeptical world that spontaneous generation was indeed a myth; by

demonstrating that the sealed boiled flasks, protected from air contamination developed no organisms.

He, too, it was whose keen brain first perceived that bacteria could live in a vacuum—the first conception of anaërobic bacteria. And when scientific proof was needed to support the already started observation that bacteria could multiply by fission Spallanzani was the one to bring it forth.

But it was more than these discoveries that this poet, this enthusiastic jack-of-all-trades, gave to science and medicine; it was his method of scientific test, of having normal controls to compare with the materials experimented on.

During the time of Leeuwenhoek, in England, in 1642, was born an individual of whom we do not think as a contributor to medicine but whose name is almost synonymous with the Laws of Gravity—Isaac Newton. But medicine may well regard him as one of its clan, for this mathematician was the first to show the composite nature of white light and to break and analyze the spectrum; and therein to display to us the therapy ray of still mooted value—the ultra violet ray.

He is said to have been a three pound baby at birth. One is tempted to wonder what would have happened had he been a seven pound baby. But this thought might have its unhappy possibility likewise.

Not long afterward, in 1743, in still monarchical Paris, was born Antoine Lavoisier, statesman and chemist. He it was who determined the real nature of oxygen and hydrogen. It was he who for the first time made mankind aware of what it breathed and the purposes of the air it breathes, and gave physicians and science an understanding of the vital process, respiration. Sad indeed, it is to think that this shining beacon of chemistry should have been beheaded by the frenzied injustice of the Revolutionary Tribunal. And in mentioning Lavoisier we must not forget a humble entry, into this glorious array of scientists, from the ministry, one Joseph Priestly, an American Non-conformist Unitarian Minister, who paved the way for Lavoisier by discovering the element oxygen and some of its values. His name for oxygen was "dephlogisticated air."

And those of us who believe that modern medicine has been greatly advanced by electricity, perhaps, as much through its use in

our laboratory methods as in any other way, will surely hold a place amongst medicine's immortals for Michael Faraday, the great English physicist, born in London in 1791. True, Faraday did not discover electricity; Boyle, Von Guericke, Franklin, Volta, Oersta and Humphry Davy had demonstrated the nature of the electric current and that iron and steel could be magnetized by it. But it remained for Faraday to discover the nature of the induced current, to build the first simple machines that paved the way for the use of electricity in all human endeavors as well as medicine; and that he knowingly scorned to patent a discovery which he keenly realized could bring him tremendous financial gain, should, in itself place him on a noble pedestal.

One of these cinematic days, a great wail of sorrow is going to burst forth from the mouths of all but one of our hero-seeking movie producers, for they have overlooked not only one of the greatest figures in medical history but one of the most thrilling and picturesque figures in biographic vision. Not a physician, this towering giant so well known to all of you, but a chemist who metamorphosed himself into a bacteriologist. Well might we call Louis Pasteur the Columbus of medicine for though his name is not adorned with the title of M.D. he unfolded a new world and a new sphere of thought—a new basis of activity for medical science.

Practically no time nor study did this Louis Pasteur, born in Dôle, France, in 1822, put in learning of the diseases of mankind or of the structure of the human body. For he was a chemist and later a bacteriologist; and, paradoxically enough his great basic discoveries began, not from a lofty aim to help mankind's sufferings, but from efforts to aid the industry and commerce of France. Pasteur's first fame was made in chemistry—his discovery that the two forms of tartaric acid had isomers, and the conclusion that compounds could be different by merely being mirror images. This discovery brought him a professorship in Lille and a wife, but these two rewards did not, as some misogynists might think, counteract each other, for history records and reiterates the understanding and devotion of his wife. It seems worthwhile to note this marriage, for the constancy, the care, and understanding his wife gave him are always in view in his history; and one must needs

feel that a marriage to some irritable gayety-loving female might well have kept from the world his later great contributions.

And now we come to the Saga of the sugar-beet. If ever a bacteriological society adopts a symbolistic ritual, one of its holy stars might well be the sugar-beet. For Pasteur, heeding the plea of the beet sugar growers, that science help them in their sudden difficulties in the fermentation of alcohol from sugar-beets, excitedly spied some strange minute and seething rod-like forms in the fermenting sugar-beet brew; and lo and behold, the enthusiastic Pasteur soon had, from this observation and study, given to the world its first knowledge that fermentation is caused by yeast, that yeasts were not merely incidental; and secondly, that these minute rod-like forms in some way affected or hindered the yeast's work. But even more he realized in the recesses of his keenly reflecting mind that probably similar small living things did much other damage in other activities of life. No shrinking violet was Pasteur and it needed no one but himself to spread the story of his discovery. As a result he was made director of scientific studies in the Normal School of Paris, and here microbes became his food, his drink, his work and his dreams. He set about successfully to re-prove Spallanzani's work, to show that spontaneous generation was a myth. He showed that certain microbes caused the spoiling of wine and that they could be killed without boiling, merely by heating to a certain point—which process now bears the deserved name of Pasteurization. His next great triumph was the saving of the silkworm industry by demonstrating the presence of parasites in the silkworm.

And now in patriotic fervor, he let loose all his scientific armamentarium to make French beer superior to the German. And when the great surgeon, Lister, wrote him to acknowledge that his discovery of antiseptic surgery owed its inception to Pasteur's work on bacteria, Pasteur with enthusiasm, even if without artistic taste, inserted Lister's letter in a treatise on beer that he wrote. Our reverence for Pasteur will surely keep us from inferring that our great scientist thereby intended to intimate the equal importance of his improvement in French beer and the discovery of antiseptic surgery.

Pasteur did not prove the bacterial relation of infection and disease, but by his ex-

periments in foods, he was so certain of it that he was constantly proclaiming and preaching that bacterial prevention would prevent disease and epidemics, and it seems that his failure to attack the problem first was due probably to the fact that he was not a physician, and not in contact with human disease.

But soon came the great physician, Dr. Robert Koch, in Germany, to demonstrate the anthrax and tuberculosis organisms, and at once began a race between chemist-bacteriologist Pasteur, and the physician, Koch, to discover new disease organisms. And now Pasteur left the vineyards and beer-kegs. Though not proving it, he asserted that childbed fever was due to a transmitted organism. With the help of loyal capable physicians, whom he took as assistants to make up for his lack of medical knowledge, he went directly at the task of isolating bacteria. Soon his agile brain perceived the fact of bacterial immunization, and he proceeded, in what was an almost national demonstration, to display the effectiveness of creating anthrax immunity in sheep. And then came the thrilling climax to the sixty-two years of Pasteur's life. For now with the aid of his brilliant medical co-workers, after patient months of work, came his discovery of the method of vaccination against rabies.

In the same year that Pasteur was born, was born one Gregor Mendel. Not his even the allied calling of Medicine, such as Pasteur's chemistry, but the humble life of a pondering monk in a monastery at Brunn, Austria. No scientific training, no dazzling triumphs for this man, but yet perhaps by the very facts of heredity that he established, was there in him the scientific curiosity that enabled him, with his now well-known work on the common pea, to make his revolutionary discoveries in heredity. And though his work remained long in oblivion, yet its rediscovery in 1900 produced a definite advance in medical research in heredity and eugenics.

And we must record another non-physician, namely Sir Francis Galton, whose life, though devoted to exploring and weather studies, did not prevent him from making startling advances in heredity, not by constant test as Mendel, but by his astute observations of the characteristics of mankind. And he was, perhaps, the first to advocate the belief that there should be restriction in the birth of the unfit.

The name of Eli Metchnikoff usually brings up the vision of an almost fanatical enthusiast of lactic acid buttermilk, as a cure-all and longevity producer. But the great work of this Russian, born in 1843, who was a zoölogist and biologist, and not a physician, was not the longevity of the Balkans, but his discovery of Phagocytosis; and though his theory that all immunity was due to this, may not be entirely correct, medicine owes him a great debt.

When laymen are apt to twit us with the fact that medicine has evolved only an uncertain science, we oft scornfully pull out of our scientific bag a reference to the X-ray as a physician's great contribution from the standpoint of exactness. But it was a professor of physics, William Roentgen, who first perceived in 1895 the value of those invisible, penetrating rays that emanated from the vacuum tube; the latter, invented by another physicist, Sir William Crookes. It is hardly necessary to reiterate the benefit to medicine, made by the contribution of these two physicists.

And as we contemplate now the ever increasing value of the X-ray in malignant diseases, there comes the thought that another one of medicine's boasts, the use of radium, was donated to us physicians, not by a follower of Hippocrates, but by a professor of physics and chemistry and even more by his wife, an amateur chemist, Madame Curie, born in Warsaw, in 1867. Their struggle to isolate radium was done, not with its medical potentialities in view, but merely to isolate a new element; but when a chance burn of the flesh showed the power of its emanations, the Curies were quick enough to perceive its possibilities in medicine.

Modern medicine is filled with writings on vitamins, and physicians have done tremendous work in its field, but perhaps, the first and keenest observations that led to medicine's later pursuit and understanding of them was made, not by a physician, but by a brilliant sailor, Captain James Cook, the discoverer of the Hawaiian Islands. He it was who first saw the relationship between scurvy and the lack of fresh foods, and was the first to definitely state and report that scurvy was due to lack of fresh foods. And it was a physiologist, Gowland Hopkins, who, in 1906, in the feeding of rats, first made the discovery that there were accessory food factors in fresh food, and so stimulated the vitamin surge.

And then there was Emil Fischer, born in Prussia, in 1852, who gave us that valuable drug, Veronal, and showed the specificity of the intestinal enzymes, and first developed our knowledge of the purines, the sugars, and the amino acids.

Laryngologists have to thank a great individual in a field rather remote from the sciences for one of the most important instruments in their diagnostic equipment. For it was Manuel Garcia, a Spaniard, born in 1852, teaching singing in Paris, who, in an attempt to learn more about the characteristics of the vocal cords, hit upon the brilliant idea of the laryngoscope.

And amongst other non-physicians, who enabled medicine in the past and present century to forge steadily ahead, notable are John Scott Haldane, a physicist, born in Edinburgh, in 1860. He it was who first showed the chemical regulation of respiration and evolved the methods of gas and blood analysis, and brought about the invention of that important instrument, the basal metabolism machine.

Not an internist nor a dermatologist but a zoölogist was Fritz Schaudinn, born in 1871, in Prussia. He chiefly by his skill and technic in staining was able to discover for us, in 1905, the spirocheta pallida, that corkscrew organism of syphilis, which had so long eluded constant attempts at its revelation.

And I have a slight suspicion that all surgeons must feel an inward wave of chagrin when they reflect that the discovery that allowed them to make their greatest progress, *i.e.*, general anesthesia, was developed, not by one of the clan of physicians or surgeons, but by two dentists, Horace Wells, of Connecticut, and William Morton, of Massachusetts, who, in 1846, first attempted the use of ether on a dental patient. Morton, though a dentist, was at the time a medical student, and quickly perceived the possibilities of ether anesthesia in surgery, and on October 6, 1846, the first operation with ether anesthesia was performed by a Dr. Warren, in Massachusetts General Hospital. It is interesting to note that Sir Humphrey Davy, a physicist, had in 1800 (forty-four years before), noted that nitrous oxide could destroy pain, and had stated that it might probably be used to advantage in surgical operations, but these two dentists were the first to use and see its practical possibilities.

The development of the theory of evolu-

tion was made chiefly by two naturalists, Darwin and Wallace, though Herbert Spencer, the great philosopher, had shrewdly remarked, prior to their epoch-making conclusions, that, "Life is an internal adaptation to external relations." And though great physicians have contributed noteworthy additions, credit for the origination of this theory indisputably belongs to these two nature students.

Psychiatry and the study of human relationships is being recognized today as deservedly a part of the province of medicine, and it seems logical that, to understand human mental needs and human reactions, one should understand the body which both affects and is affected by these needs and reactions. But the earliest conceptions of the human mind and behavior were often made, not by physicians, but by thinkers and even by semi-charlatans, and, though many of the latter may have had a lack of scruples, they were oft endowed with insight.

It was, perhaps, a brilliant, though semi-quack, physician, Frederick Mesmer, born in 1733, who first focused the attention of thinking men on the influence of the mind on bodily activities, by his practice of animal magnetism, later known as Mesmerism, and then hypnotism. But the first inkling of psychoanalysis was brought forth by a watchmaker, one Phineas Quimby, born in New Hampshire in 1802, who first taking up Mesmerism, discarded it. He practiced his new method by rubbing his patients' heads and abdomens gently and having them speak freely of all that was troubling them or that came to their mind. He claimed that, "Disease is primarily an erroneous belief to be cured by truthful suggestion." Mary Baker Eddy was a patient of his in 1864 and undoubtedly Christian Science indirectly sprang from Quimby. Freud undoubtedly initiated his own revolutionizing theories and made his basic conclusions independently, but one suspects that this early method of Quimby, had it been developed, would have achieved many of the conclusions later expounded by Freud.

The teaching of normal sexual life and the understanding of birth control, which should have been entirely in the hands of

physicians, seems, until recent date, to have been sadly neglected by them. Apparently it took the love of freedom and mental vision of poets and literary men to throw off the shackles of the theological attitude that sex was some horrible and forbidden thing, from which the minds of man should stand aside; and not dare to understand. Men of the rank of Voltaire and Goethe stimulated freedom in all action and thinking, though our own writers, like Walt Whitman and a brilliant, courageous, graduate nurse, Margaret Sanger, were undoubtedly leaders in brushing aside the forbidding veil of ignorance in sex. But it is interesting to note that even recently a survey of physicians' opinions in birth prevention, made by one of our own group, showed a few physicians, even in this day, who flatly maintained they gave no advice on it under any conditions.

It might be fitting in ending to mention Reuben Kahn, bacteriologist, now head of the laboratories in Ann Arbor, who has given us the Kahn test, which has almost supplanted the Wassermann, and who has recently been cited for his brilliant new work on immunity. No physician's training has he had, but go to any of the medical meetings in Ann Arbor, and there you will see this eager-eyed, small, energetic but quiet man, intently absorbing every conclusion made, and see shining in his face that earnest hunger for some point that might lead him to show some new and worthwhile research.

We have omitted some of the greatest and innumerable of the lesser of non-medical contributors to medicine, but, as we have mentioned, their names are legion. It may startle us when we contemplate how many of the great names in medicine were not adorned with the title "Physician," but truly they were all "Physicians without M.D.'s," and, rather than feel humbled, we should feel elated that, perhaps, the future great discoveries of medicine may be made not only by great medical men, but by keen geniuses in the planets of chemistry, or physics, et cetera, or even by some non-scientist, whose lucid insight and intelligence will construct or unearth from our present knowledge some brilliant creative discovery.

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JULY, 1934

EDITORIAL

DEMAND AND SUPPLY OF M.D.'S

This is a perennial topic for this time of year. The month of June liberates a new supply of physicians fresh from hospital internship to compete in an already crowded profession. It was stated in a recent number of the *Journal of the American Medical Association* that in 1933, 5,012 persons entered the medical profession through licensure. During the same period 3,500 physicians died, adding to the profession approximately 1,500 persons.

Students of vital statistics maintain that the population of the United States is tending towards stability, since a study of the decade 1920 to 1930 shows an increase of only six-tenths of one per cent a year. It is evident that the medical profession is increasing in numbers more rapidly than the general population.

According to the latest available statistics there is one licensed physician to every 780 persons in the United States. The proportion in England is one to 1,490; in France one to 1,690; in Sweden one to 2,890. Of course we are living in an age of "overcrowding." No profession or vocation is exempt. That is what unemployment means and it is one of the problems, the greatest problem of the immediate future.

The ratio of one physician to 780 persons, however, does not represent the actual situation so far as medicine is concerned; if it

did it would not be so serious. We have also the cultist in great numbers who sees many "patients." Perhaps the number who practice the various bizzare forms of healing is held in check by the number of qualified licensed physicians. To limit further the number of properly trained physicians might mean a greater development of cultism. The public by law demands a high standard of non-professional and professional education of its regular physicians and surgeons. It has been pointed out time and again how inconsistent of the state to permit persons without any adequate education and training to attempt to practice healing. When a poor nit-wit in the guise of a chiropractor is able to carry on until he is seized by the arm of the law, the whole state is to blame for permitting circumstances whereby any half baked person can insinuate himself into the practice of healing in the guise of a cultist.

So-called "overcrowding" as it concerns the medical profession would be relieved by the elimination of the cultist and the dissemination of information in regard to the possibilities of scientific medicine.

ADEQUATE REPRESENTATION

The *Journal of the Indiana State Medical Association* in its issues for May and June contains tabulated statements of representation in the American Medical Association of the profession of the various states over a period of ten years. The representation referred to includes such offices as president, president-elect, vice-president, secretary, general manager, treasurer, speaker of the house of delegates and members of the board of trustees which are elective, also the various councils and standing committees which are appointed or confirmed by the House of Delegates. The tabulation does not include the office of librarian, editor or general manager emeritus and the officers of the sections of the association. The findings are not without interest. The state of Illinois has had nearly three times the representation the state membership would warrant according to the distribution among other states. This of course can be accounted for owing to the fact that the headquarters of the Association are located in the State of Illinois. Michigan has no complaint to raise on the ground of inadequate representation at 535 N. Dearborn St., Chicago, inasmuch as the membership in the State

Medical Society here has been fully and justly represented. According to the *Indiana State Medical Journal*, twenty-seven states have supplied all the officers and committees for the decade studied, namely from 1924 to 1933, inclusive. Twenty-one states of the Union, it was found, had not been represented throughout this decade. In these twenty-one states there is given the number of 12,976 state society members or 13.12 per cent of the entire membership. There is a possibility that this lack of adequate representation is an oversight rather than a matter of design. Anyone interested in this piece of investigation will undoubtedly be supplied with a reprint on application to the *Journal of the Indiana Medical Association*.

In the interests of democratic distribution, however, now that this discrepancy has been brought to notice, efforts should be made to correct the situation.

THE BREEDING OF HOBBY HORSES

New York physicians (probably not all of them) have from time to time held an art exhibit at the New York Academy of Medicine. Perhaps in some respects the specimens of painting resemble some of those exhibited annually in Detroit by Michigan artists, for a distinguished sculptor who examined some of the work of the New York artists is reported to have said that he would hate to place his life in the hands of any surgeon who could not see forms and structure more accurately than the exhibitors of the Academy. In other words the critic is not willing to admit even that as artists they are good surgeons. We have seen works of art so-called by alleged artists that do not reflect much glory on the painter. However, this is cat argument.

Hamlet defined art as holding the mirror up to nature. This is not a good definition, otherwise a photograph would be the highest form of art. Old fashioned as we are, good draftsmanship seems at least a prerequisite to art. The ability to draw well (freehand), to put it in a negative way, should not be a hindrance to the surgeon. Such art should make one's hand the ready servant of his will. It should also train his faculty of observation. Surgery itself is an art in which technic forms a large part; the rest is judgment, and judgment is developed by observation and experience. We would like to see physicians and surgeons in every county so-

ciety in Michigan emulate the example of the New York Academy of Medicine and spend some of their spare time in the breeding and rearing of such hobby horses.

VACATION TIME

This is the time of the year when in florid beauty trees and groves appear and man seems the only growth that dwindles here, with apologies to the poet Goldsmith. The present is, however, an exception, inasmuch as vegetation has likewise dwindled with the torrid atmospheric condition of May and June. With man, however, his spirits and his grip upon life are renewed by a change of scene. Relief from the daily routine is necessary if he is to approach his tasks with a fresh attitude of mind. It is not our purpose to suggest ways in which one's vacation may be spent. That is a matter of personal preference. The important thing is that the worker, professional or otherwise, surround himself with an environment different from that to which he is accustomed, a necessity for a certain period each year if he is to avoid growing stale. Not only for himself, but his office help should be given time off for reasons both altruistic and selfish. More is accomplished by the person who lives more or less a rhythmic life between work and play. Such a mode of living broadens one's horizon. It enables him to view his tasks in their proper light, namely as a means to an end and that end is life itself.

"To him who holds his nose to the grindstone rough,
And keeps it down there long enough,
There will be no such thing
As brooks that babble and birds that sing;
These three things will his world compose,
Just himself, the stone and his darned old nose."

PERCUSSION AND AUSCULTATION*

It has been less than two centuries since physicians have been enabled to diagnose chest diseases through the methods of percussion and auscultation. So important to medicine are these methods of auditory examination that the x-ray, electrocardiogram and clinical laboratory have supplemented rather than replaced them.

Although, since early times, men had pounded their chests with pride and had

*Historical editorial on the evolution of devices and methods that have aided in the advancement of medical science.

heard the sounds elicited, it remained for Leopold Auenbrugger, a Viennese physician, to realize that the resonance of the chest when struck was peculiarly associated with healthy lungs. For seven years, he studied the resonance of the human thorax in the Spanish Hospital of Vienna and in the autopsy room. He found that fluid in the pleural cavities or consolidation of the lung interfered with normal resonance so that on striking the chest, a dull morbid sound was produced. The duller the sound and the more extensive the dullness, the more severe and the more extensive was the disease. According to Auenbrugger, when the thorax is struck "slowly and gently with the points of the fingers, brought close together and at the same time extended," sounds are produced, and from the nature of the particular sound, "an opinion is formed of the internal state of the cavity."

When Auenbrugger's ninety-five page pamphlet appeared (1761), the great physiologist, Haller, welcomed it warmly as did one or two less known writers, such as Unzer. Most of the outstanding clinicians of the day, however, gave little attention to the invention of percussion. Van Swieten, Auenbrugger's teacher and one of the most distinguished physicians in Europe, ignored the work altogether; others, such as Vogel, Sprengel and de Haen maintained that there was nothing new in the method. Hippocrates, they said, had listened to chest sounds; Soranus and Alexander of Tralles had differentiated between ascites and tympanites through percussion. Hippocrates, it is true, had shaken patients by the shoulders and listened for the splash of liquid in the chest, but the succussion sounds of Hippocrates were not percussion sounds. Likewise, the abdominal percussion of the later Greek physicians had no relation to the thorax, the only body region with which Auenbrugger was concerned. In contrast with most of the master physicians of the time, a few men quietly used the method and saved it from oblivion. Among these were Maxmillan Stoll of Vienna, the Swiss physician, Zimmerman, and Reil of Halle. After a period of nearly fifty years in which percussion had been forgotten or unused throughout most of Europe, Corvisart, Napoleon's physician, reintroduced and recommended the method. He had learned the technic from Stoll, and, for many years, had practiced thoracic percussion of the heart. In his monumental study of the heart and

blood vessels, which was probably the most elaborate investigation of both clinical and autopsy material which had yet appeared, the importance of percussion as a diagnostic method was emphasized. Through his students and by his translation (1808) into French of Auenbrugger's book, Corvisart raised percussion from an incidental and largely ignored method to one of first importance.

As percussion became more widely practiced throughout Europe, a second Frenchman, Pierre Adolphe Piorry, in 1826, chanced upon a modification of the percussion technic. In examining the chest of a fat patient in whom the chest sounds were obscure, he placed a large coin against the chest and, in percussing over the coin, found that the sounds became more distinct. He spoke of this method as mediate percussion. To aid in mediate percussion, Piorry devised a thin plate of fir-wood with a small handle which he called a plessimeter. Many varieties of plessimeter came into general use. In England, David Barry devised a little ebony hammer with which to tap the plessimeter, though it was not until 1841 that the use of the percussion hammer, as designed by Wintrich, became widespread. Four years earlier, Stokes had used his finger with the nail toward the chest as a substitute for a plessimeter, and, for many years, it was a point of controversy whether finger percussion or plessimetry were the better method. A later modification of the percussion technic was the palpatopercussion method of Ebstein.

Accompanying the spread of percussion in thoracic diagnosis during the nineteenth century, there arose a second auditory method of chest examination, mediate auscultation. This method was a modification of a very old but little used technic, namely the placing of the examiner's ear against the patient's body. Early in the past century, Corvisart and his pupil, Bayle, had on rare occasions listened to the heart-beat in this way. Mayer of Geneva, in 1818, had listened to the fetal heart-beat and thus had discovered the only certain sign of pregnancy previous to labor that was known for a hundred years. Immediate auscultation or the direct application of the ear to the body, however, was probably no more important than percussion during the three or four decades following Auenbrugger's publication.

René Théophile Hvacinthe Laennec, while attempting to listen for the heart sounds of

a patient, recalled the physical principle that sounds are readily transmitted over solid conductors. He rolled several sheets of paper into a tight cylinder to form a sound conductor and placed one end of it against the patient's chest. On placing his ear against the other end of the scroll, the heart sounds which had been obscured by layers of fat were quite distinct. Laennec studied this method of detecting thoracic sounds using tubes of wood, glass and metal, but concluded that wood was the best conducting medium. The instrument which he constructed and called the stethoscope was a foot long piece of wood, one and one-half inches in diameter with a quarter inch bore. The thoracic end was provided with a plug or obturator which could be removed to allow the bore of the instrument to subtend a greater area of the thorax. For ease in transportation, the instrument could be disconnected at the middle.

With his stethoscope, Laennec studied the sounds of the heart-beat, respiration and voice as they appeared in auscultation of the chest wall of both normal and diseased patients and published his researches in a large work dealing with mediate auscultation, chest disease and heart disease. He believed that the air in the lung was a poorer conductor of sound than the fluid or solid substance of other organs. The sounds of breathing and of the voice were transmitted differently to the stethoscope on the chest wall if the deeper chest structures were consolidated or surrounded by fluid than in the normal state. His studies on the nature and location of sounds in their relation to the physical diagnosis and pathology of the chest are exceptionally complete. Laennec's successors, for a time, did little to amplify the original work, though a tendency toward increasingly fine discrimination between chest sounds was evident. Fournet, in particular, attempted to find specific sounds for each part of the lung and to detect characteristic sounds for each type of disease.

In contrast with this tendency and specifically correlated with the methods of both percussion and auscultation was the critical survey made by the Viennese physician, Skoda. He maintained that the preference for finger percussion or the use of the plesimeter was secondary to the capacity of the physician to interpret percussion sounds. He furthermore modified Laennec's view that consolidated regions in the chest were conductors of sound, pointing out that voice

sounds reverberate through the bronchi, are reflected by the bronchial walls and initiate sympathetic or consonant vibrations in the more dense regions. He recognized that many sounds which he called indeterminate had no clinical value, and he simplified the terminology of pulmonary sounds and râles. He also attempted to account for heart sounds and murmurs. Skoda's studies, in general, led to a simplification of stethoscopic methods which, in turn, resulted in an increased use of the instrument in general diagnosis.

Within fifty years of Laennec, the stethoscope evolved from a clumsy wooden tube to the modern type of instrument. First, the stethoscope was made lighter, having a narrow stem-like tube with expanded funnel-like extremities for application to the chest and ear. This type of instrument continued in use in Europe until the end of the century. Certain of these monaural stethoscopes were arranged in the seventies so that thermometers, percussion hammers or plesimeters could be carried as a single unit. (Occasionally, percussion and auscultation were combined by listening to the percussion sounds through the stethoscope.) Golding Bird was one of the earliest (1843) to connect the expanded aural and pectoral extremities of the instrument by a flexible tube. Shortly afterward, stethoscopes were designed so that chest sounds could be heard with both ears. Williams of London, for a time, used a stethoscope consisting of two metal tubes with flattened ear-pieces joined to a bell-shaped pectoral piece. Leonard, in 1851, had a double stethoscope consisting of two gutta-percha tubes between the chest piece and ear-pieces. The ear-pieces were kept in place by the elasticity of the tubes. Cammann of New York placed a spring between the tubes to hold the stethoscope to the head and devised ear knobs to fit into the auditory meati. The modern instruments are but modifications of the Cammann model. The addition of a rim of soft rubber to the chest piece allowed the instrument to fit the convexity of the chest better. Other instruments, such as that of Scott Alison, having two chest pieces, and the stethoscopes designed to adhere to the chest wall through suction devices, have proved to be of transitory value, as have those designed for more than one listener. For a time, clinicians differed as to the relative importance of the early monaural type of stethoscope and the binaural instruments. The insistence of

Austin Flint and others that two ears were better than one eventually led to the widespread adoption of the binaural instrument.

At present, mediate auscultation through the use of the stethoscope and percussion involving the use of the plessimeter or the finger are routine methods with which every physician is acquainted. Though the clinical laboratories during the past half century have introduced new methods for the diagnosis of chest diseases, it seems likely that such methods will never supplant the preliminary or bedside methods of examination which percussion and auscultation provide.

—W. L. D.

LEST WE WAKE UP

(DR. G. S. GORSLINE in *Calhoun County Medical Bulletin*)

"It is not a question at the moment as to whether the doctors are favorable to health insurance, but in view of the fact that certain very questionable developments are apparent in other states and in view of the further fact that, from past experience, we may well be afraid that we as a profession will suddenly awaken some day to the fact that we have been handed a piece of ill-advised legislation and that the laity or the politicians, or both, have placed a collar about our professional necks and are leading us in any direction that their whim may indicate. If by study and early experiment we are fore-armed with knowledge and will stand united behind our officers, such conditions as above indicated need not happen."

HONORING THE DOCTOR

(*Detroit News*)

A throng of Oceana County men and women filled the auditorium of the Shelby High School one evening last week to express their regard for the physician who had brought them into the world. Not all of Dr. William L. Griffen's "babies" could be present—he counts 3,800 altogether, many of them are grandfathers and grandmothers now. But enough appeared to make the occasion distinctly impressive. It was a deserved tribute, one which probably could be given appropriately by similar groups to many other veteran general practitioners scattered up and down the land.

Doctors who make careers out of helping meet the familiar crises of birth and death, sickness and injury among their neighbors can be found in all communities, big and little. They serve faithfully, often obscurely, and with too little reward. Only occasionally, as at Shelby, do the patients and "babies" of such a man awaken to realization of the gratitude they owe for a life of service.

FEAR OF "STATE MEDICINE"

(*The United States News*)

Fear of "state medicine" or of public control of the medical profession are grounds of opposition offered by physicians and medical organizations in a number of States to programs for providing medical care from public funds as relief measures. This situation is reported by the American Public Welfare Association, which is coöperating with the Julius

Rosenwald Fund in a survey of this phase of public relief.

The Federal Emergency Relief Administration inaugurated the Federal relief plan last year; already millions on the relief rolls are receiving free care. In twenty-one States the FERA plan has been adopted for caring for teeth, eyes and general health; ten other States have continued their own systems of medical care for the poor.

Delays in the work, caused by conflicts between relief authorities and the medical profession, are reported from nine States. In two of these States, coöperation on the basis of a payment plan has been refused on the grounds set forth. Taxpayers also are frequently resistant of making the community responsible for health care.

PREVENT'ION

'Twas a dangerous cliff, as they freely confessed,

Though to walk near its crest was so pleasant;

But over its terrible edge there had slipped

A duke and full many a peasant.

So the people said something would have to be done,

But their projects did not all tally.

Some, "Put a fence around the edge of the cliff,"

Some, "An ambulance down in the valley."

But the cry for the ambulance carried the day,

And it spread through the neighboring city;

A fence may be useful or not, it is true,

But each heart became brim full of pity

For those who slipped over the dangerous cliff.

And dwellers in highway and alley

Gave pounds or gave pence, not to put up a fence,

But an ambulance down in the valley.

Then an old sage remarked: "It's a marvel to me

That people give far more attention

To repairing results than to stopping the cause,

When they'd better aim at prevention.

"Let us stop at its source all this mischief," cried he,

"Come neighbors and friends, let us rally;

If the cliff we will fence, we might almost dispense

With the ambulance down in the valley."

"O, he's a fanatic," the other rejoined;

Dispense with the ambulance? Never!

He'd dispense with all charities, too; if he could.

No, no, we'll support them forever!

Aren't we picking up folks just as fast as they fall?

And shall this man dictate to us? Shall he?

Why should people of sense stop to put up a fence,

While the ambulance works in the valley?

—JOSEPH MALINS in *The Public*.

SURGICAL TREATMENT OF INGROWN TOENAILS

E. LAWRENCE KEYES, St. Louis, presents the results of surgical treatment of ingrown toenails in 110 operations performed by twenty-six different surgeons in three separate institutions. He observed that the rate of recurrence of ingrowth of the nail following operation is high and that the rate of healing of many of the operative wounds is prolonged. The rate of recurrence was 13.6 per cent. The operative wounds required an average of nineteen days to heal. Recurrences were attributed either to the performances of an operation inadequate in type or to failure at operation to remove the necessary amount of nail-bearing matrix or of nail wall. No recurrence could be ascribed to growth of new nail from eponychium. Since the eponychium ordinarily was not excised at operation, this structure would seem to lack the nail-forming function attributed to it by some authors.—*Journal A. M. A.* (May 5, 1934).

DRS. McLEAN, BIDDLE AND CAMPBELL FÊTÉD

A pleasant feature of the Annual Alumni Clinic day of the Detroit College of Medicine and Surgery, now the Medical Department of the Wayne University, was the complimentary dinner honoring Drs. Angus McLean, Andrew P. Biddle and Don M. Campbell, three of the most prominent alumni of the College whose careers ran almost parallel for about half a century. The large ballroom of the Statler Hotel, Detroit, was well filled in honor of the occasion. Dr. J. M. Robb, president of the Alumni Association, acted as toastmaster. Suitable music was rendered by two pipers in Highland costume, Templeton Moore, tenor, Harry McDonald, baritone, accompanied by Dr. Frank MacKenzie at the piano. Dr. James Inches proposed the toast to the three whom the chairman designated "the three musketeers." Dr. Inches was in good vein and in a reminiscent mood. He recalled the careers of the three guests of honor. He referred to the humble beginnings of all three who were content with salaries from two to twelve dollars a week for the first two or three years of their professional careers. From these humble beginnings the careers of all three have been marked with steady progress which placed them at the head of the medical profession and made them nationally known. He spoke also of the life-long friendship that existed among them unmarred by any cloud of dissension; of their mutual assistance to one another, of their capacity for friendliness that makes friends of all with whom they come in contact. Dr. McLean, he said, never missed a chance to do a friend a favor. He spoke of Dr. McLean's career, first on the health commission of the city and his record on the board of education in which both he and Dr. Biddle had worked together for the unification of the educational factors of Detroit which had culminated in the establishment of the Wayne University. Dr. McLean had been the recipient of many honors both civic and military. Three times he had attended the International Congress of Military Surgeons. He spoke of Dr. McLean's career as a surgeon and as a preceptor whose influence produced many surgeons among the younger men.

Dr. Don M. Campbell through his ability and personality has achieved the largest eye, ear, nose and throat practice in the United States. As a teacher of ophthalmology he has few equals.

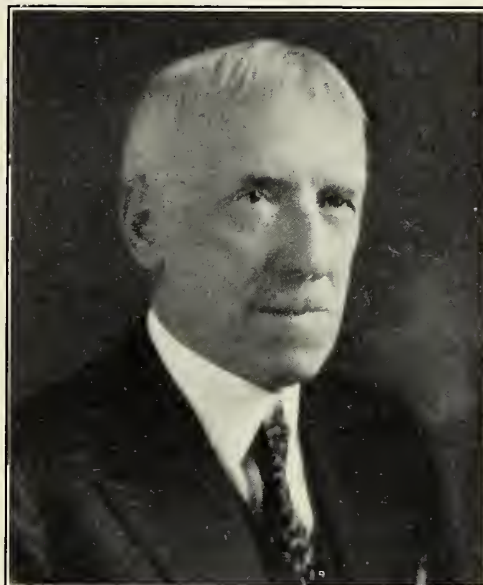
Dr. Biddle's career was marked by extreme patriotism. During the past one hundred years, Dr. Inches went on to say, there was not an instance in which Dr. Biddle had not an ancestor or contemporary relative in service either in the United States army or navy. Dr. Biddle had himself attended West Point looking forward to a military career. His dreams were carried out in the traditions of his family. Dr. Biddle had been President of the Michigan State Medical Society for two terms, namely 1917-1918. Professionally he has conferred upon him the highest office in the gift of his specialty, namely, president of the Dermatological Society of the United States. He also enjoyed the unique distinction of being the first interne in Harper Hospital.

As a matter of record we have here printed a summary of the careers of the three distinguished guests. After the address of Dr. Inches each of the three responded in a suitable manner.

Dr. Andrew Porter Biddle

Andrew P. Biddle, a native of Detroit, was born February 25, 1862. He attended schools at Grosse Ile, Geneva, Switzerland, Heidelberg, Germany, and the old Detroit High School which was situated in

Capitol Square. Following in the footsteps of a long line of military and naval ancestors, he entered the U. S. Naval Academy at Annapolis, Maryland, in 1880, but did not finish because of eye trouble. Returning to Detroit he took up the study of medicine, graduating from the Detroit College of Medi-



DR. ANDREW P. BIDDLE
1916-1918.

President, Michigan State Medical Society,

cine with the class of 1886. He was the first interne at Harper Hospital, serving from 1885 to 1887. Dr. Angus McLean was his assistant, beginning his internship in 1886. In 1887 he became associated with Dr. J. B. Book, who was then Police Surgeon.

Five years later, in 1892, he joined the Faculty of the Detroit College of Medicine as Assistant to the Chair of Dermatology and served in various positions until he reached the chair of Professor Emeritus of Dermatology in 1917. Rising through the various ranks of service he is now consultant on the medical staffs of the Receiving Hospital, Woman's Hospital, Children's Hospital of Michigan, St. Joseph's Mercy Hospital, the Protestant Children's Home of Detroit, and to the Board of Health of the City of Detroit.

In keeping with the traditional family interest in military and naval affairs (two brothers are graduates of West Point), he served for many years in the Michigan National Guard. When the National Guard rendezvoused at Island Lake on the declaration of War with Spain in April, 1898, he was commissioned Major and Surgeon of the 31st Regiment, Michigan Volunteer Infantry, by Governor Hazen S. Pingree and served with the regiment, the first to leave the state, during the severe epidemic of typhoid fever at Camp George H. Thomas, Chickamauga Park, Georgia. From 1892 until 1897 he was U. S. Pension Examining Surgeon under appointment from President Cleveland.

Always active in civic affairs, he was appointed a member of the State Board of Health, 1913-1919, by Governor Ferris (through the insistence of Dr. Angus McLean) and from 1917 until 1925 he served on the Board of Education, being its president in 1918-1919. In 1925 he was appointed a member of the Detroit Library Commission, serving up to the present time.

Interested in the advancement of his profession he was secretary of the Michigan State Medical Society, 1900-1906; then as counselor and in 1916-1918, as president, being the only man to serve two terms as president. He was active in enlisting the physicians of the State for service in the World



DR. DON M. CAMPBELL

War. He was the first editor of the JOURNAL of the Michigan State Medical Society from 1902-1906.

He is a member of the Wayne County Medical Society, the Michigan State Medical Society, the American Medical Association; a fellow of the Detroit Academy of Medicine (president 1911-1912, Fellow of the American College of Physicians, member of the Detroit Dermatological Society (first president 1922), the Chicago Dermatological Society, and the American Dermatological Association. The latter body, in making Dr. Biddle their president in 1925-1926, bestowed upon him the greatest honor an American dermatologist can obtain.

He is a member of the Naval and Military Order of the Spanish American War (Commander of the Michigan Commandery, 1927), a member of the Hazen S. Pingree Camp, a Companion of the Military Order of Foreign Wars.

Because of this interest in education which included thirty years of teaching and eight years on the Detroit Board of Education, the College of the City of Detroit in 1929 conferred upon him the honorary degree of Doctor of Science. For many years he has urged the creation of a University from the various colleges run by the Detroit Board of Education, and was able to see this done when Wayne University was established within the last year.

Dr. Don M. Campbell

Don M. Campbell was born at Wardsville, Ontario, and received his preliminary education at the Windsor Collegiate Institute. He graduated from the Detroit College of Medicine in 1885, a year before Drs. Biddle and McLean. He too interned, choosing the Emergency Hospital, then located at Gratiot and St. Antoine. After the internship he took postgraduate work in Edinburgh and London. At Edinburgh he came under the influence of Dr. Joseph Bell, a remarkable diagnostician, under whom Conan Doyle also served and who became the in-

spiration for the fictional character Sherlock Holmes. Dr. Bell had exceptional powers of observation and deduction, and many stories are told about him. Because a man in his clinic stood with his hat on, erectly, and answered questions directly and in respectful tones Dr. Bell expressed the conclusion that he had been recently discharged from the army, that he had served twenty years or so and from other observations told where he had served. The man confirmed each deduction.

Dr. Campbell was the first graduate of the Detroit College of Medicine to receive the L.R.C.S. and L.R.C.P. given by the Royal Colleges at Edinburgh where he also was an honor student.

Returning to Detroit he started practice with Dr. C. J. Lundy in 1887, which relationship was continued until 1890, when Drs. Biddle, McLean and Campbell opened a combined office. This relationship was continued for fifteen years.

Dr. Campbell has taught at his Alma Mater for forty years and since 1892 has been Professor of Ophthalmology and Head of the Department of Ophthalmology. He is the dean of his specialty in this region and has been preceptor to an unusually large group of men training for special practice in the eye, ear, nose and throat field. In this manner his office has given postgraduate, special education to the entire state. His undergraduate courses have always been very popular and unusually instructive. He has a happy faculty of establishing friendship with his students and many a student has left his class feeling that he had a personal friend on the faculty after hearing Dr. Campbell start an explanation with his oft-used phrase, "My Boy."

He has been a member of the Wayne County Medical Society since 1887 and was president in 1914-1915. He is a member of the Michigan State Medical Society, the American Medical Association, the Detroit Academy of Ophthalmology and Otolaryngology, the American Oto-Rhino-Laryngological Society, and the American Otologic Society.

He is consultant at Harper, Receiving, Woman's, and Detroit Eye, Ear, Nose and Throat Hospitals. He recently received the honorary degree of Doctor of Science from the College of the City of Detroit.

Dr. Angus McLean

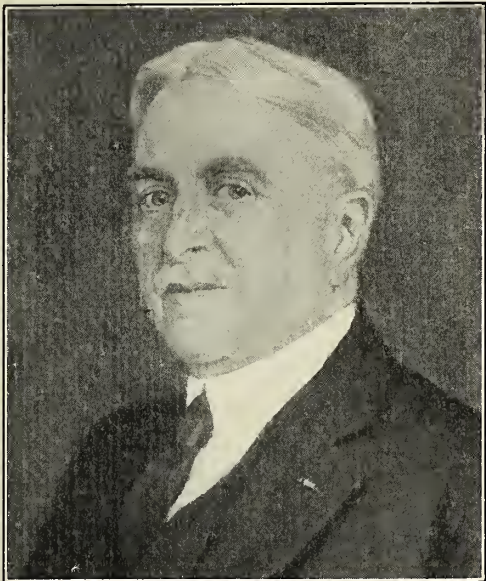
Angus McLean was born in St. Clair County, Michigan, April 4, 1862, the son of Donald M. McLean. He graduated from the Collegiate Institute of Strathroy, Ontario, in 1880 and from the Detroit College of Medicine in 1886. He interned at Harper Hospital, where he served under Dr. Biddle in 1886 and 1887. In 1888 he started in practice with Dr. H. O. Walker, one of the foremost surgeons of the time. Later he practiced with Dr. J. B. Book and then took postgraduate work in Edinburgh.

From 1888 to 1891 he was City Physician; in 1893 he was appointed by President Cleveland Quarantine Inspector for the Port of Detroit. From 1895 to 1901 he was Police Surgeon; from 1905 until 1913 he was Professor of Clinical Surgery at the Detroit College of Medicine. In 1905 Governor Warner appointed him to the State Board of Health, where he served until 1911, and he was appointed to the Detroit Board of Health by Governor Ferris and served until he went overseas. He was Attending Surgeon to Harper, Providence, and Children's Hospitals for many years.

He has been elected to the Detroit Board of Education many times and has served with great benefit to the schools.

Doctor McLean has a notable war record. He organized the Harper Hospital unit which became Base Hospital Number 17 and was its Commanding Officer. He was sent to Italy by the Surgeon General as President of the Medical Commission to the

Italian Armies. He received citation by the Adjutant General of the U. S. Army for heroic work in the A.E.F. By appointment he was Special Surgeon to the Peace Commission in France and was detailed by General Pershing to accompany President Wilson home in February, 1919. In 1919 he received



DR. ANGUS McLEAN
President, Michigan State Medical Society,
1920

a Diploma of Honor for services at Dijon and was recommended for the Legion of Honor by the French Government. In 1921 he received the Distinguished Service Medal from Congress and was made Corps Surgeon of the 16th Army Corps of the 6th Corps Area. In 1929 he was one of four delegates to the Fifth International Congress of Military Medicine at London by appointment of President Hoover and he attended many other conventions in Europe that year.

In 1928 a reunion of Base Hospital Number 17 was made a tribute to him, at which time he received expressions of esteem and affection from large numbers of his associates, including General Pershing and the Governor of Dijon.

Among the honors he most treasures are his Distinguished Service Medal, Knight of the French Legion of Honor, Honorary membership in the Federation of Soldiers and Sailors of France, the formal thanks of the German Red Cross, and the Medal from the Military College of Medicine and Surgery of the University of Warsaw that is the emblem of Fellowship in the Polish Brotherhood of Military Surgeons. Dr. McLean was elected Honorary Professor of Military Surgery in this school while serving as delegate from the United States to the International Congress of Medicine and Pharmacy held in Warsaw in 1927.

This medal was presented by W. Kozlowski, Polish Consul at Detroit, at a meeting of the Wayne County Medical Society. At that time a tabulated list of Dr. McLean's military honors was given by Dr. Biddle. Among these were included letters from Surgeon General Ireland regarding treatment of British troops, mentioning six hundred handled with one death, and from King George.

Dr. McLean is a member of the Wayne County Medical Society, the Michigan State Medical Society,

the American Medical Association, and a Fellow of the American College of Surgeons. He has been president of the Wayne County and the Michigan State Societies (1920). In 1921 he organized the Academy of Surgery of Detroit and was its first president.

Many of the most capable surgeons in the state have trained under Dr. McLean and many of the hospital staffs are headed by his former assistants. His office, like that of Dr. Campbell, has been a veritable postgraduate school. He has been a frequent contributor to the literature of surgery and has profoundly influenced the profession in his community.

MICHIGAN'S DEPARTMENT
OF HEALTH

C. C. SLEMONS, M.D., Dr.P.H., Commissioner
LANSING, MICHIGAN

THE CHILD HEALTH NURSING PROJECT

The special child health nursing project begun in Michigan on February 1, 1934, under the CWA, to continue for two months, ended on April 1, except in the case of 20 nurses who were given an extension of time of two weeks to enable them to complete immunization and vaccination programs.

The project had as its objective the improvement of child health with special reference to nutrition, and the relief of unemployment among nurses. One hundred and seven nurses were employed, ninety-nine nurses and eight supervisors. They worked in 79 counties on programs planned to meet the needs of the communities. Where possible, the nurses were assigned to a county health department or to a county nurse, their work to supplement that of the regular unit. Assistance in supervising the state program was given by the entire field staff of nurses of the Bureau of Child Hygiene and Public Health Nursing of the State Department of Health.

The promotion of nutrition of children, especially of children in families on relief, was the primary objective of the project, but any phase of child health that needed attention in a particular community was included in the work. With the exception of assistance to the local physicians in the immunization, vaccination, and tuberculin testing programs, the work done by the nurses was entirely educational. It was based largely upon home calls. Among the figures given in the tabulated report of the project, the following are particularly significant:

- 24,458 homes visited
- 10,194 children tuberculin tested (work done by local physicians and positive tests followed by x-rays)
- 8,736 children vaccinated against smallpox
- 18,772 children given complete diphtheria immunization, two treatments each.

The response to the child health nursing project was very gratifying. Not only was the nursing service appreciated by the parents of the children helped, but the county relief administrators found the assistance given by the nurses exceedingly valuable. At least eight counties have continued the service temporarily under county relief funds, and in one county the board of supervisors assumed the expense of carrying on the service for an additional month. It, temporarily at least, aided the nurses also, since all of the county nurses were unemployed.

LABORATORY CONTAINERS TO BE REPLACED

Physicians who have been inconvenienced by the loss in the mails of specimens sent to the laboratories of the Michigan Department of Health will welcome the announcement that the present containers are to be replaced as rapidly as possible by the type formerly used.

The containers now in service, adopted because of their inexpensiveness, have failed to stand up under mailing and will be discarded in favor of the type with the tin screw top. These do not allow specimens to be lost out.

RESORT INSPECTION

The only resort inspection work that will be carried on this summer will be that done by local officials. The resort sanitation program that has been been a part of the special summer program of the Bureau of Engineering of the Michigan Department of Health will not be possible this year because of lack of appropriation.

The highway water inspection work that has had as its objective the safeguarding of drinking water supplies used by motorists will also be suspended for this year.

GENERAL NEWS AND ANNOUNCEMENTS

Dr. W. T. Dodge of Big Rapids died June 8.

Dr. J. F. Carrow of Cadillac has relocated in Marion.

The Postmaster at Fife Lake in Grand Traverse County reports an opening for a physician.

Dr. Grover C. Penberthy of Detroit has been elected a member of the American Surgical Association.

The preliminary program for our annual meeting in Battle Creek, September 11-13, will appear in the August issue.

Dr. W. G. German, pathologist at Blodgett Hospital, Grand Rapids, sailed June 1 for two months' post graduate work in Europe.

The program for the annual meeting of the Upper Peninsula Medical Society will be found in the space devoted to Society Activities.

Scientific exhibits are solicited for the Battle Creek annual meeting. Kindly advise the State Secretary as to amount of space you desire.

Please read the advertising section of each issue and give preference to the advertising firms who patronize you. To gain this income your support is necessary.

The following county societies publish County Bulletins imparting programs of meetings, reports and local activities: Muskegon, Oakland, Jackson, Ingham, Berrien, Bay, Kalamazoo, Kent, Wayne and Calhoun.

By invitation, Dr. F. C. Warnshuis will deliver an address on "Problems and Trends in Medical and Dental Economics" at the general session of the

annual meeting of the American Dental Association in Saint Paul on August 8.

At the Cleveland A. M. A. meeting the following officers were elected: Dr. J. S. McLester of Alabama, president-elect; Dr. George G. Reinle, California, vice president; Drs. Olin West, H. L. Kretschmer and F. C. Warnshuis, respectively, secretary, treasurer and speaker. Atlantic City was selected for the 1935 meeting place.

At the election for the Ontario legislature June the nineteenth, eleven physicians were among the successful candidates. This is twelve per cent of the total membership. What a wholesome influence might follow if twelve per cent of the members of the Michigan State legislature were able and influential members of the Michigan State Medical Society.

Detroit has been the place of meeting of two National Medical Associations during the same week. The American Institute of Homeopathy and the National Eclectic Medical Association held their annual meetings during the week June eighteenth to the twenty-second. The American Institute of Homeopathy was founded ninety years ago. The sessions, according to accounts in the daily press, were concerned with problems of a social and economic nature largely as well as methods of practice peculiar to each.

THE AMERICAN COLLEGE OF PHYSICIANS

The American College of Physicians will hold its Nineteenth Annual Clinical Session in Philadelphia, April 29-May 3, 1935. Announcement of these dates is made particularly with a view not only to apprising physicians generally of the meeting, but also to prevent conflicting dates with other societies that are now arranging their 1935 meetings. Dr. Jonathan C. Meakins, of Montreal, Que., is president of the American College of Physicians, and will arrange the program of General Sessions. Dr. Alfred Stengel, vice president, in charge of medical affairs of the University of Pennsylvania, has been appointed general chairman of local arrangements, and will be in charge of the program of Clinics. Mr. E. R. Loveland, executive secretary, 133-135 S. 36th Street, Philadelphia, Pa., is in charge of general and business arrangements, and may be addressed concerning any feature of the forthcoming session.

POSTGRADUATE REGISTRATION

Attendance at the postgraduate courses recently given at Ann Arbor and Detroit was marked by the registration of the following doctors in the courses indicated:

Diseases of Metabolism

Ann Arbor, Michigan

May 14-18, 1934

Dr. Frederick W. Bald, Flint, Mich.
 Dr. W. E. Barstow, St. Louis, Mich.
 Dr. Frederick J. Burt, Holly, Mich.
 Dr. C. S. Czarnecki, Toledo, Ohio
 Dr. J. S. DeTar, Milan, Mich.
 Dr. Robert S. Drews, Detroit
 Dr. Hugh S. Foley, Dearborn, Mich.
 Dr. C. R. Gately, Pontiac, Mich.
 Dr. M. R. Hannum, Milan, Mich.
 Dr. Don V. Hargrave, Eaton Rapids, Mich.
 Dr. L. Mae James, Detroit
 Dr. J. F. McCann, Youngstown, Ohio
 Dr. Arthur A. McNabb, Lawrence, Mich.
 Dr. Chas. G. Miller, Sturgis, Mich.
 Dr. F. W. Morley, Toledo, Ohio
 Dr. M. W. Neidus, Youngstown, Ohio
 Dr. Elizabeth N. Newcomb, Carleton, Mich.

Dr. A. W. Petersohn, Battle Creek, Mich.
 Dr. C. S. Sanborn, Windsor, Ont., Canada
 Dr. Alden G. Sheets, Eaton Rapids, Mich.
 Dr. C. M. Spencer, Scottville, Mich.
 Dr. B. R. Sleeman, Linden, Mich.

Gynecology, Obstetrics and Gynecological Pathology

Detroit, Michigan

June 4-8, 1934

Dr. R. Bailey, St. Clair Shores, Mich.
 Dr. M. S. Ballard, Grand Rapids
 Dr. G. R. Cheatham, Johnson City, New York
 Dr. Peter H. Darpin, Detroit
 Dr. H. D. Giles, Columbus, Ohio
 Dr. J. I. Humphries, Windsor, Ont., Canada
 Dr. L. Mae James, Detroit
 Dr. J. A. Wm. Johnson, Newton, Iowa
 Dr. Sabina Kessler, Bay City, Mich.
 Dr. L. D. MacRae, Gagetown, Mich.
 Dr. J. A. McLandress, Saginaw, Mich.
 Dr. Edw. Mead, Detroit
 Dr. George R. Norton, Birmingham, Mich.
 Dr. A. W. Petersohn, Battle Creek, Mich.
 Dr. R. R. Scott, Ludington, Mich.
 Dr. T. I. Walton, Bryan, Texas
 Dr. H. L. Williams, Norwalk, Ohio

Proctology

Detroit, Michigan

May 28-June 2, 1934

Dr. Fred Beekel, Cleveland, Ohio
 Dr. Eugene S. Browning, Grand Rapids
 Dr. Haviland Carr, Covington, Kentucky
 Dr. Hector M. Chabut, Jackson, Mich.
 Dr. Emor L. Cartwright, Fort Wayne, Ind.
 Dr. Guy W. DeBoer, Grand Rapids
 Dr. E. Donald, Miami, Florida
 Dr. Lynn A. Ferguson, Grand Rapids
 Dr. Neil A. Gates, Ann Arbor
 Dr. Howard B. Hoffman, Ludington, Mich.
 Dr. J. F. Heffernan, Carleton, Mich.
 Dr. L. Mae James, Detroit
 Dr. George W. Leitch, Milwaukee, Wis.
 Dr. Harry Liefers, Grand Rapids
 Dr. Edward D. Maire, Grosse Pointe, Mich.
 Dr. P. G. Mainzer, Erie, Penna.
 Dr. Howard H. McNeill, Pontiac
 Dr. Carl R. Martin, Fountain City, Tenn.
 Dr. A. W. Petersohn, Battle Creek, Mich.
 Dr. Donald A. Pollock, Yale, Mich.
 Dr. Herman G. Rosenblum, Flint, Mich.
 Dr. Manuel G. Spiesman, Chicago, Ill.
 Dr. Ralph V. St. John, Grand Rapids
 Dr. Lawrence E. Turton, Worthington, Ohio
 Dr. Frank O. Votey, Grand Rapids

OBITUARY

DR. E. F. PARTELLO

Dr. Edward F. Partello of Detroit died June seventh. He was born in Washington, D. C., May 19, 1865, and obtained his medical degree from the University of Chicago. He served as a physician in the Spanish American War with the American Red Cross and later was physician for Ringling Brothers' Circus. He came to Detroit twenty years ago from Grand Rapids, and from 1918 until about 1929 was house physician for the Kunsy Theaters. He was a member of the Wayne County Medical Society. Survivors are his wife, Charlotte W., and five sons, Egerton, Frank, Clinton, Clyde, and Howard.

DR. GEORGE O. PRATT

Dr. George O. Pratt, for nearly thirty years a Detroit physician, died June 5, 1934. Dr. Pratt was born in Pontiac, July 12, 1866. He came to Detroit

as a child and was educated there. After pursuing the retail drug business for nearly twenty years he studied medicine and was graduated from the Detroit College of Medicine in 1905. He continued the practice of medicine until about two years before his death when he became ill. He was a member of the Michigan State and Wayne County Medical Societies. He leaves his wife, Mrs. Alice Pratt, and three children, Dr. George K. Pratt of New York City, and Miss Elizabeth and Glenn B. Pratt, of Detroit.

OF GENERAL MEDICAL AND SURGICAL INTEREST

THE RESTORATION OF THE GENERAL PRACTITIONER

Dean Lewis, Baltimore, points out that during the economic depression the general practitioner (consultant) has fared better than the specialist, for more people have discovered that they could be treated in their homes; his overhead has not been high. Many consultants have changed their point of view and have condescended to make house calls. So, as far as medicine is concerned, the economic depression has automatically restored some of the old order. The author believes that the restoration of the doctor should begin in the medical school as he should know how to make a diagnosis, he should know the natural course of disease and how to observe it, and he should know what therapeutic measures should be instituted to meet the indication and when they are to be employed. During the past few years, emphasis has been laid on the laboratories. This was necessary because such rapid strides had been made in biochemistry, biophysics, bacteriology and the histologic examination of tissue. The laboratories have been obtained and now more stress should be laid on the clinic. More clinical material is required, for in modern medical teaching the technique of diagnostic procedures is no longer simply demonstrated; but they are learned by the students and practiced by the student until these procedures can be used independently. In teaching hospitals an endowment should provide the required number of free beds and the patient should be the patient of the student, who under strict supervision can assume charge. This is not possible under any scheme in which the patient pays full or half rates. The medical training which many students now receive makes the doctor dependent on hospitals, laboratories, technicians, nurses, consultants and specialists. These distinctly influence the attitude of students and have a deciding influence in the development of specialism. The importance of physical examinations cannot be overemphasized, for the student of medicine who observes well, percusses well, hears acutely and feels intelligently has advanced far in the way of diagnostic ability. With a due apportioning of diligence, the essentials of anatomy, physiology and pathology can be mastered. During the brief years of pupillage the details of the various branches cannot be grasped so that all cases can be accurately diagnosed and successfully treated. A deep knowledge of pathology is the foundation stone of diagnostic ability. Every effort should be made to bring these practitioners into contact with hospital facilities. Unfortunately, at the present time many of these men from the day they begin practice are excluded from hospital services. The medical profession is largely to blame for the development of specialism and the eclipse of the doctor, for during the past few years the patient has been educated to be-

lieve that the specialist is the last word, and as a result patients consult specialists first rather than the doctor. The licensing of specialists or the recognition of certain qualities which specialists should have will limit considerably their number and increase the number of doctors.—*Journal A. M. A.* (March 31, 1934).

MEDICINAL TREATMENT OF COMMON COLD

Harold S. Diehl, Minneapolis, shows the relative values of various drugs and drug combinations in the treatment of 1,039 cases of acute coryza, 262 cases of subacute or chronic colds, 114 cases of influenza and 53 cases of acute pharyngitis. Of the drugs studied only opium and certain alkaloids derived from it seem to be of value in the treatment of acute coryza. Combinations of papaverine with codeine, papaverine with dilaudid, and papaverine with morphine were followed by "definite improvement" in from 74 to 78 per cent of the cases. For general use a combination of codeine and papaverine seems most desirable because of the high percentage of good results obtained with it, its low toxicity, and the absence of danger, or at least of "practical danger," of habituation to it. Morphine and dilaudid (dihydromorphinone hydrochloride) alone were followed by definite improvement in nearly as large a proportion of cases (73 and 72 per cent, respectively) but each was distinctly more toxic alone than when combined with papaverine. Codeine, papaverine, powdered opium, and powder of ipecac and opium, were followed by definite improvement in from 56 to 61 per cent of cases. The toxicity of these drugs is in the following order: codeine, powdered opium, powder of ipecac and opium and papaverine, with codeine practically as toxic as morphine. Powder of ipecac and opium, although of value in the treatment of acute colds, is no more beneficial than the same amount of powdered opium without the ipecac. Sodium bicarbonate, acetylsalicylic acid and a combination of acetylsalicylic acid-acetphenetidin-caffeine give little if any better results in the treatment of acute coryza than the lactose tablet used as a control, each being followed by definite improvement in from 35 to 42 per cent of cases. A computation, based on incomplete reports of time lost from their usual activities by patients who received the various medications suggests that it may be possible with codeine-papaverine or dilaudid-papaverine combinations to reduce materially the amount of time lost as a result of acute colds. None of the medications studied seem to be of benefit in subacute or chronic colds. Morphine was tried in influenza but was of no value. The number of cases of pharyngitis treated were too few to justify conclusions, but none of the drugs seemed of value.—*Journal A. M. A.*

THE TEACHING OF INDUSTRIAL HYGIENE

Leverett D. Bristol, New York, states that of eighty-five medical and public health schools in the United States and Canada covered in his study, information has been received from sixty-six with reference to the teaching of industrial hygiene; of the sixty-six, only thirteen schools give separate courses in industrial hygiene; twenty-four medical schools assign one or more separate lectures to industrial hygiene in their general public health or hygiene courses; eighteen schools give only brief attention to industrial hygiene, and another twenty-one, together with a number of schools unheard from, ap-

parently give no instruction in this subject. Field visits to industrial plans for inspections and surveys should be to the teaching of industrial hygiene what hospital ward rounds are to the teaching of clinical medicine; fifteen schools report that they make such field trips available. Medical and public health schools that give instruction in this subject should cultivate the friendly coöperation of local industries in order to enhance their facilities for field training of students in industrial hygiene. Instruction in industrial hygiene, including industrial medicine, industrial sanitation, industrial toxicology and other subjects, at least in graduate schools of public health and when economically feasible, should be organized under one separate, independent department of industrial hygiene with a fulltime professor as coordinator and director. He should be a physician with experience in industrial health administration, and in the larger universities he might also serve as the director or teacher of courses on this subject in medical, nursing, business or other schools. Detailed subject matter and methods of teaching industrial hygiene must be based on local conditions, facilities and needs as well as on knowledge of the elements of an adequate industrial health program. Industrial hygiene should involve primarily a program of health conservation and of disease and accident prevention. It is a matter of preventing the common diseases and mishaps of adult life and of building up positive health and encouraging the development of proper health habits among working people in general. Industrial hygiene, including industrial medicine, will become what physicians and medical educators help the business man and industrial worker to make it. In this connection, opportunities and responsibilities are unlimited for the development of the right sort of leadership among future generations of medical students.—*Journal A. M. A.* (March 31, 1934).

ABDOMINAL PAIN: II. THE SENSITIVE REGIONS IN THE ABDOMEN AND WAYS IN WHICH THEY MAY BE STIMULATED TO PRODUCE PAIN

WALTER C. ALVAREZ, Rochester, Minn., points out that the main sensory pathways out of the upper part of the abdomen lie along the major splanchnic nerves. Most of the sensory nerves in the abdomen probably do not belong to the autonomic system and are no different from those in the rest of the body. Evidence is accumulating to show that certain types of severe and intractable pain are due to some abnormality in the sympathetic nerves. The abdominal viscera are insensitive to such stimuli as cutting, crushing and burning. The few sensory nerve endings present are associated mainly with arteries. The parietal peritonum is well supplied with nerves. If a stimulus to an abdominal organ is to be sensed as pain, it must be applied over an area wide enough to affect many of the scattered nerve endings. Much of the pain produced by distention of the intestine appears to be due to tension on the root of the mesentery. The stomach is normally so insensitive to acids and other irritants that it is difficult to explain the pain of ulcer. As yet no one of the explanations proposed is adequate or satisfying. The salient fact is that at times the nerves appear to become so sensitized that pain can be felt even in the absence of strong acid or of a defect in the mucous membrane of the stomach and duodenum. Pain is produced in a hollow organ when powerful contractions struggle to force material past an obstruction; it is produced also by rapid distention or by tension on the mesentery. The distribution of sensory nerves in the abdomen follows somewhat the original segmental arrangement existing in the embryo. For this reason pain that arises in the stomach,

duodenum and gallbladder is usually felt above the navel, and pain arising in the colon is usually felt below the navel. This point is helpful in diagnosis. Pain arising in the appendix itself is usually felt around the navel, while pain arising in the peritoneal covering of the organ or in the cecum is felt in the right lower quadrant of the abdomen. Long continued pain and soreness around the cecum should suggest the presence not of appendicitis but of chronic perityphlitis, or typhlitis, or of disease somewhere along the parietal (not mesenteric) sensory nerve tracts supplying the cecal region. The mechanism of biliary colic is not clear. Such colic is seen in the absence of gallstones, in the absence of a gallbladder and, rarely, even in the absence of most of the common bile duct. Experimental distention of the gallbladder usually does not produce pain, but distention of the ducts does produce pain. What is puzzling is that, in most of the experiments that have been done, this pain has not radiated typically to the right scapula. The solid organs of the abdomen are so insensitive that the only thing that seems to cause pain in them is either rapid distention of the capsule or the extension of inflammation from them to adjacent parietal peritoneum. Some forms of abdominal pain are due to the accumulation of irritant metabolites or toxins in the tissues. Pain may also be caused by any disease or spasm in arteries which leads to injury of the tissues through the development of ischemia.—*Journal A. M. A.* (April 28, 1934).

THE DOCTOR'S LIBRARY

MEDICAL CLINICS OF NORTH AMERICA. (Issued serially, one number every other month.) Volume 17, Number 6. Chicago Number, May, 1934. **INDEX VOLUME.** Octavo of 266 pages with 38 illustrations. Per clinic year July, 1933, to May, 1934. Paper \$12.00; Cloth, \$16.00 net. Philadelphia and London: W. B. Saunders Company, 1934.

MEDICAL CLINICS OF NORTH AMERICA. (Issued serially, one number every other month.) Volume 17, Number 1. (Cleveland Clinic Number, January, 1934.) Octavo of 253 pages with 53 illustrations. Per clinic year July, 1933, to May, 1934. Paper, \$12.00; Cloth, \$16.00 net. Philadelphia and London: W. B. Saunders Company, 1934.

HUMAN EMBRYOLOGY AND MORPHOLOGY. Sir Arthur Keith, M.D., F.R.S., LL.D., D.Sc., F.R.C.S.; Master of the Buckton Browne Research Farm; formerly Conservator of the Museum and Hunterian Professor, Royal College of Surgeons of England. 5th ed., 535 ill., 558 pp. Baltimore, William Wood & Co., 1933, \$10.00.

No other book in English interprets as well as this does the significance of human anatomy. The work is more than its title might suggest. It is not so much a descriptive embryology text as a guide to the plan of organization and development and evolutionary value of anatomical structure. Information on comparative anatomy, developmental anomalies and embryology is synthesized to produce a background against which medical school human anatomy should acquire a new importance. Both physicians and students will profit from its reading. The preceding (1923) English edition of Keith's work was a valuable addition to anatomical literature; the present expanded but compact work should, in view of its American publication, receive wide popularity in this country.

W. T. D.

MODERN CLINICAL SYPHILOLOGY. John H. Stokes, M.D., Duhring Professor of Dermatology and Syphilology, University of Pennsylvania; Member, Commission on Syphilis and Cognate Diseases, League of Nations Health Organization. Second Edition, Revised and Entirely Reset. 1,400 pages with 973 illustrations and text figures. Philadelphia and London: W. B. Saunders Company, 1934. Cloth, \$12.00 net.

It is not too much to say that this is the largest single volume on any one disease and its manifestations that has appeared in the English language. Some one has said study syphilis and all else will be added unto you. This second edition is the result of three years' revision of the matter which appeared in the first. Every aid to diagnosis as well as methods of treatment are given, not to mention full treatment of the protean pathology of syphilis.

THE COLLECTED PAPERS OF THE MAYO CLINIC AND THE MAYO FOUNDATION: Volume XXV (Papers of 1933—Published 1934). Edited by Mrs. Maud H. Mellish-Wilson and Richard M. Hewitt, B.A., M.A., M.D. Octavo of 1,230 pages with 210 illustrations. Philadelphia and London: W. B. Saunders Company, 1934. Cloth, \$11.50 net.

These collected papers of the Mayo Clinic cover almost every phase of medicine and surgery. They represent a valuable selection from the work of the Mayo staff of over two hundred workers. The table of contents resembles that of a work on Practice of Medicine. It is virtually a textbook on the practice of medicine and surgery newly written each year. Those who have procured former volumes will look forward to Volume XXV, which is the peer of the best of its predecessors.

ATLAS OF EXTERNAL DISEASES OF THE EYE. Humphrey Neame, F.R.C.S., Hon. Ophthalmic Surgeon Royal London Ophthalmic Hospital. Senior Hon. Ophthalmic Surgeon University College Hospital, London. 110 pages, 51 colored plates, price \$5.00. Philadelphia: P. Blakiston's Son and Company, Inc., 1934.

This little work will be found of value to the general practitioner as well as to the ophthalmologist. There are many conditions noted that wisely he will not undertake to treat, yet that does not mean that an attempt should not be made to diagnose. The illustrations are as true to the appearance of the actual pathology as possible to make them. Each picture is accompanied by a brief description giving symptoms, diagnosis, pathology, prognosis and treatment.

RADIOGRAPHIC EXPLORATION OF THE MUCOSA OF THE GASTRO-INTESTINAL TRACT. The Cole Collaborators, including Lewis Gregory Cole, M.D., Robert E. Pound, M.D., William Gregory Cole, M.D., Russell R. Morse, M.D., Courtenay I. Headland, M.D., and Ames William Naslund, M.D. Price, cloth \$7.50. Three-quarters Morocco \$10.00. Pages, 336, over 250 illustrations. The Bruce Publishing Company, Saint Paul and Minneapolis, 1934.

"The object of this book," writes the senior collaborator in the preface, "is to describe and analyze the fundamental roentgenographic principles on which the diagnosis of various lesions must be based and to correlate the anatomic, pathologic and roentgenographic findings." The work does not deal with roentgenologic diagnosis of the various gastro-intestinal lesions as such. Its purpose is rather an exposition of the fundamental principles underlying roentgenologic diagnosis of conditions which may affect the alimentary tract. The standing of the personnel of authorship at once recommends the work to every roentgenologist wherever located. The work is also recommended to the surgeon or internist who would familiarize himself with the principles fundamental to roentgenologic diagnosis of lesions affecting the gastro-intestinal tract. The first chapter is devoted to methods of study of the gastro-intestinal mucosa, including a description of apparatus and technic. Then follows a splendidly

illustrated chapter presenting important anatomic data from the roentgenologic viewpoint. Two lengthy chapters deal with findings observed, in which chapters are described the lumen of the tract as seen in profile, the pliability of the mucosa to peristalsis, the pattern of the mucosal folds or rugæ, caliber of the lumen of the small intestine, the ileocecal valve, the physiologic function of the coats of the small intestine and correlation of anatomic and roentgenologic findings. The fifth and last chapter is an evaluation and correlation of the four fundamental findings observed in the exploration of the gastrointestinal mucosa. The roentgenologist will read with especial interest the section which includes a translation of a study by Gösta Forssell (Sweden), known personally to a number of roentgenologists in this state, in which the senior author engages in controversial discussion. Probably in no other medical or surgical specialty is the matter of craftsmanship so important as in roentgenologic textbooks and journals. The reasons are obvious. The publisher of Radiologic Exploration of the Gastro-Intestinal Mucosa is deserving of the highest commendation in his masterpiece of the bookmaker's art. The work will prove invaluable to the roentgenologist and to others who value a basic study of the alimentary tract by means of the x-rays. The book is dedicated to the late Dr. P. M. Hickey of Detroit and Ann Arbor. The frontispiece is an excellent reproduction of a photograph of Dr. Hickey.

A PRACTICAL TREATISE ON DISEASES OF THE SKIN FOR THE USE OF STUDENTS AND PRACTITIONERS. Oliver S. Orensby, M.D., Clinical Professor and chairman of the Department of Dermatology, Rush Medical College of the University of Chicago; with revision of the Histopathology by Clark Wylie Finneureud. Fourth edition, thoroughly revised. Illustrated with 619 engravings and three color plates, 1288 pages. Lea and Febiger, Philadelphia, 1934.

Before describing the different skin diseases the author devotes over a hundred pages to the following subjects: Anatomy and Physiology, General Symptomatology, General Etiology, Pathology, Diagnosis, Prognosis and Treatment. A mastery of these introductory chapters will greatly facilitate comprehension of the thousand or more pages which follow, in which are discussed the numerous diseases peculiar to the skin. Thirty-six new skin diseases are included in this revision of this work. The author describes in detail such methods of general therapeutics as: Roentgen Rays, Grenz Rays and radium phototherapy, vaccine therapy and also the technic for treatment with liquid air and solidified carbon dioxide. The descriptions of the various dermatoses are concise and complete. The work cannot be too highly recommended for the general practitioner who meets in his practice the numerous skin diseases which in many instances are referred to the dermatologist. As a single volume text it will be found invaluable to the medical student.

OBSTETRIC MEDICINE. The Diagnosis and Management of the Commoner Diseases in Relation to Pregnancy. Edited by Fred L. Adair, M.A., M.D., F.A.C.S., Mary Campau Ryerson Professor of Obstetrics and Gynecology; Chairman, Dept. of Obstetrics and Gynecology, University of Chicago; Chief of Service, Chicago Lying-In Hospital; and Edward J. Stieglitz, M.S., M.D., F.A.C.P., Assistant Clinical Professor of Medicine, Rush Medical College of the University of Chicago; Assistant Attending Physician, Presbyterian Hospital; Attending Physician, Chicago Memorial Hospital; formerly Attending Internist to the Chicago Lying-In Hospital. Octavo 743 pages, illustrated. Published 1934. Cloth, \$8.00 net. Lea and Febiger, Philadelphia, Pa.

What is obstetric medicine? The answer of course is general medicine as it concerns the pregnant woman. It will be noted that the editors of this volume, to which there are thirty-nine contributors, are an obstetrician and gynecologist, and an internist. The multiple authorship includes many of the most

noted names in American medicine and obstetrics and gynecology. This work fills a need, inasmuch as we know of no other single volume which deals with the same subject. Works on obstetrics and works on internal medicine we have. The present volume, however, is in a sense a correlation of the two, with the exception that the technic of obstetrics is left for the special volumes on the subject.

MEDICINE A VOYAGE OF DISCOVERY. By Josef Löbel, M.D. Farrar & Rinehart, on Murray Hill, New York.

During the past decade or two several popular works on medicine have appeared of very high merit, in this country. Their titles are well known. "Medicine a Voyage of Discovery" is a German book along the same line. The present volume is a translation. Among the subjects dealt with in a very entertaining way are: Medicine, Anatomy, Physiology, Pathology including Cellular Pathology, Bacteriology, Serology, Surgery, Endocrinology, The Theory of Constitution, Psychoanalysis and Personality. The translation has been very carefully done into idiomatic English. The result is a volume that doctors will find of interest and one that can be recommended to the curiously intelligent patient.

CORRECTIVE PHYSICAL EDUCATION. By Josephine Langworthy Rathbone, M.A., Instructor in Physical Education, Teachers' College, Columbia University. Illustrated. W. B. Saunders Company. Philadelphia and London, 1934.

This book is intended for students of physical education and physical therapy. The contents are based on medical literature and therefore we take it are in conformity with the best medical teaching of the present day. We have here described exercises for the correction or compensation of physical defects, exercises that can for the most part be performed without medical apparatus.

MODERN DRUG ENCYCLOPEDIA AND THERAPEUTIC GUIDE. A presentation of 8,160 modern, non-pharmaceutical, medicinal preparations, comprising: 1,878 drugs and chemicals, 535 biologicals, 860 endocrines, 1,563 ampule medicaments, 209 medical foods, 129 mineral waters, 2,344 individual and group allergens and 642 miscellaneous products. Jacob Gutman, M.D., Ph.D., F.A.C.P. For the use of physicians, dentists, pharmacists and medical students. Paul B. Hoeber, Inc., New York. Price \$7.50.

The title of this book fairly describes the scope of its contents. It is in every sense of the term a drug encyclopedia. It contains nearly 1,400 pages of reading matter well classified and indexed. In addition to the index of drugs, which is very full, there is also a very complete index of therapeutic indications. The book contains a vast amount of available information on the subject of drugs.

RECENT ADVANCES IN MEDICINE. Clinical Laboratory Therapeutic. G. E. Beaumont, M.A., D.M. (Oxon.), F.R.C.P., D.P.H., London, Physician, with charge of Out-Patients, Middlesex Hospital; Physician to the Hospital for Consumption and Diseases of the Chest, Brompton; Medical Tutor, Middlesex Medical School; sometime Radcliffe Traveling Fellow, University of Oxford; and E. C. Dodds, M.V.O., D.Sc., Ph.D., F.R.C.P., Courtauld Professor of Biochemistry in the University of London; Dir. of Courtauld Institute of Biochemistry, Middlesex Hospital; Pathologist to the Royal National Orthopedic Hospital; Goulstonian Lecturer, Royal College of Physicians. Seventh Edition. 58 illustrations. P. Blakiston's Son and Co., Philadelphia, Pa.

The series of "Recent Advances" by Blakiston are too well known to require any lengthy description. The monographs on the various subjects bring the subjects up to date whenever there is sufficient advancement to warrant recording it. The present little work of 480 pages is the seventh edition. Over 100 pages of fresh material has been incorporated since the last edition of three years ago. This work includes all the newer methods of clinical examination, which fact makes it a convenient handbook for everyone engaged in the practice of medicine.

THE JOURNAL

OF THE

Michigan State Medical Society

ISSUED MONTHLY UNDER THE DIRECTION OF THE COUNCIL

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No. 8

DEPARTMENT OF SOCIETY ACTIVITY

ARTICLE 2—PURPOSE

Section 1. The purposes of this Society are to promote the science and art of medicine, the protection of public health and the betterment of the Medical Profession; and to unite with similar organizations in other States and Territories of the United States to form the American Medical Association.

114th Annual Meeting: This issue contains the program for our 114th annual meeting to be held in Battle Creek September 11 to 13. The completed program will be published in the September issue. This issue, the Battle Creek number, also contains articles on Battle Creek, its hospitals, medical activities and a historical sketch of the Calhoun County Society. Programs for the scientific sessions are perfected. A group of outstanding clinicians will participate, thus assuring an attractive meeting.

Members are urged to note the dates and plan to attend. The Calhoun County profession will act as capable hosts and assure you a profitable and entertaining time.

Upper Peninsula Annual Meeting: The program for this meeting was published in the July issue. The dates are August 16 and 17 and the place Ironwood. Every member of the State Society is invited.

Medical History: While they last, two volumes of the Medical History of our State Society may be secured by sending five dollars to the State Secretary.

Cleveland A. M. A. Meeting: Michigan's delegates will submit a complete report on the Cleveland meeting at the annual meeting in Battle Creek. The detailed minutes of the Cleveland session have been printed in the *Journal of the A. M. A.*

DR. WM. T. DODGE

On June 7 there passed on from this world one of the grand men of Michigan—Dr. Wm. T. Dodge. To fully record his life's record and his medical activities would require a volume, for his was truly a life of service, deeply dyed with human kindness and unfailing loyalty to his fellow man.

Born in Barry County in 1860, after a common school education he graduated from the medical department of Michigan's University in 1880. This was followed by post-graduate work in New York and then he began practice in Marlette in 1882. In 1890 he located in Big Rapids, where he remained in active practice till 1929, retiring because of physical infirmities.

Turn to our Society's archives and one will find record of his outstanding career. Though located in what was designated as the lumber country, he reflected in his practice the progress of scientific medicine. Frequent visits to medical centers in this country and abroad enabled him to remain abreast of the times. By 1900 he was devoting his entire time to surgery. And what a competent pioneer he was—his reputation became statewide. Many a memorable hour, do we call to mind, listening to his narrations of professional experiences.

In 1902 he was elected a member of the

Council. He served on the Council till 1919—the last 12 years in the capacity of Chairman. In 1920 he served as President, a fitting tribute for all that he gave to our Society. In 1917 he enlisted in the army and was assigned as Chief of the Surgical Service of the Base Hospital at Camp Sherman and continued in that service till discharged in May, 1919. In that service we were privileged in being with him for four never to be forgotten months. That period would also enable one to compose a volume of interesting narrative.

One could go on and on relating incidents in which he was outstanding in medical, community and business life. Words would fail, however, to adequately convey the man, surgeon, leader, and friend that he was.

In the last years his physical condition confined him to his home and bed. He became an inveterate reader and manifested deep appreciation for the books and magazines sent him.

Dodge—as he was called and he was known state-wide as “the” Dodge—has now gone on, but his memory lives on. “From his voiceless lips comes no word; but in the night of death hope sees a star, and listening love can hear the rustle of a wing.”

FUNDS

After the annual meeting in September, 1933, Dr. J. D. Bruce aided the State Society in securing a grant of funds from Mr. Tracy McGregor for the work of the Committee on Medical Economics. At the special meeting of the House of Delegates on April 12, 1934, the following resolution was passed:

“RESOLVED, That the House of Delegates approve the acceptance by the Executive Committee of financial support or assistance from any source or sources, provided, however, that such acceptance of funds or assistance shall not entail any change in the program adopted by the House of Delegates.”

The Executive Committee again requested Dr. Bruce to aid in obtaining a grant from the same or other sources. At a later meeting of the Executive Committee, Dr. Bruce reported that he was in touch with three possible contributors, among them, the Twentieth Century Fund of New York. It later developed that this Fund was the only one able to make the contribution.

In order to insure that the grant would be made in conformity with the spirit and meaning of the resolution adopted by the Delegates, an exchange of correspondence ensued. Following is the last letter written to the Fund and the reply received:

April 30, 1934.

Mr. Evans Clark, Director,
The Twentieth Century Fund,
11 West 42nd Street,
New York City.

Dear Mr. Clark:

The delay in my answer to your letter was occasioned by the need for discussing the matter of budget and future program with the Executive Committee and the Committee on Medical Economics of the Michigan State Medical Society. At a special meeting held in Lansing on Friday last the enclosed budget and program were discussed in detail.

It was the feeling of the Executive Committee that there must be a clear understanding in fairness both to the Fund and the Society, that the work to be undertaken in Michigan include the following commitments which are in accordance with the action of the House of Delegates.

- A. That the program adhere to the provisions of the enclosed resolution of the House of Delegates.
- B. That the final detailed plan for mutual health service be presented to the House of Delegates for formal action.

With the above understanding the Executive Committee will gladly accept the kind offer of the Fund. However, the Committee would not have you proceed on any assumption of what the House of Delegates may or may not do in reference to the completed plan. While I felt sure that you understood this perfectly, I was unable to give complete assurance on this point to the Council and the Committee.

With reference to the budget, you will note that it is prepared for the period, May 1 to November 1. This is to provide for the time needed, following the annual meeting of the delegates, for the inauguration of the experiments. In the event that the delegates act adversely, the work of the Economics Committee will probably be brought to a close on the conclusion of the annual meeting of the Society, about September 15.

It is my hope that the Fund will be able to provide for the budget as outlined, with the possible exception of Item 3, for which we have reason to believe that another grant may be available.

Please accept my thanks for your kind consideration.

Sincerely yours,

JAMES D. BRUCE, M.D.

May 14, 1934.

Dr. James D. Bruce,
University of Michigan
Ann Arbor, Michigan.

Dear Dr. Bruce:

I have your letter of April 30 referring to the action of the Executive Committee of the Michigan State Society. While no copy of “Resolution III” was attached to your previous letter the content of this resolution was taken for granted in my letter to you. Likewise, the second commitment mentioned in your letter appears on page 18 of the plan

mailed to me. The Fund's interest in Michigan's program lies not only in the Society's adoption of the general principle of weekly, monthly or annual payments for medical service, but also in the provisions for a constantly improving service.

As stated in my letter, "The Fund will be willing to aid in the establishment of experiments elsewhere, such as provided for in Michigan's program, in order to permit a thorough test." The last paragraph on page 17 of the plan makes specific reference to the need for such a program. It was with this purpose in mind, as well as that of assistance to Michigan, that the suggestion concerning Dr. Sinai was made. I think it is extremely important that the Fund provide consultant service in answer to the many requests that come in and, further, that the consultant should be thoroughly versed in the methods and program that have developed in Michigan.

Referring to your budget for the period from May 1 to November 1, and to your statement that the work may be brought to a close in September, I make the following suggestions:

1. That in order to permit the continuance of activities, the Michigan State Medical Society submit, through you, a semi-monthly statement of expenses to the Twentieth Century Fund, beginning May 15;

2. That this arrangement be continued until approximately June 15, when it is understood that the academic activities of your Director of Research will end and his time, in part, may be made available to other states;

3. That about June 15 the matter of budgetary needs to September 15 be presented to the Fund; and

4. That, if necessary, the matter of budget from September 15 to November 1 be presented to the Fund following the annual meeting of the House of Delegates.

Sincerely yours,

EVANS CLARK, Director
Twentieth Century Fund, Inc.

As a result of the above understanding, the Executive Committee unanimously approved the acceptance of the grant and the Committee on Medical Economics began its assigned tasks on June 8, 1934.

MINUTES OF THE EXECUTIVE COMMITTEE OF THE COUNCIL OF THE MICHIGAN STATE MEDICAL SOCIETY

The Executive Committee of the Council of the Michigan State Medical Society met in Grand Rapids on June 27, 1934. The following members were present:

B. R. Corbus
G. E. Boys
F. A. Baker
Henry Cook
H. A. Luce
Henry Carstens
President LeFevre
President-Elect Smith
F. C. Warnshuis, Secretary

1. Considerable time was spent in the discussion of the program that should be formulated in connection with our legislative interests and the coming session of the Legislature. Upon motion of Carstens-Luce an appropriation of \$300 was made

for the Legislative Committee and the Chairman of the Council and Councilor C. E. Boys were appointed to confer with the Chairman of the Legislative Committee for the purpose of formulating a budget and for definitely outlining their program of activity.

2. Upon motion of Cook-Carstens the Secretary was directed to allow the traveling expenses and \$7.00 a day for five days for the expenses of our Delegates to the American Medical Association meeting in Cleveland.

3. Upon motion of Luce-Boys an appropriation of \$500 was made for the expenses of the Joint Committee on Public Health Education.

4. Considerable time was spent in the discussion of the work of the Committee on Economics.

(a) Upon motion of Carstens-Boys the Secretary was directed to reiterate to the Economics Committee that no portion of its report and none of its findings should be made public until the entire report had been submitted to the House of Delegates and the House of Delegates had recorded its action.

(b) The Secretary on motion of Carstens-Cook was directed to communicate to the Chairman of the Committee on Economics that the report of the Committee which is to be submitted to the House of Delegates at its annual meeting in Battle Creek must be in the hands of the Secretary not later than August 10. This date being the deadline.

(c) Upon motion of Carstens-Boys the Secretary was directed to cause the report to be printed as promptly as possible after it is received on August 10 and to submit it with a confidential communication to each member of the House of Delegates and of the Council in order that these men may have an opportunity to digest the report before it comes up for consideration and action at the annual meeting of the House of Delegates in September.

(d) Upon motion of Carstens-Cook the Secretary was instructed to rigidly adhere to the financial policy laid down by the Council in regard to the receipt and disbursement of funds for the expenses of the Committee on Economics. The Secretary was instructed to request itemized details regarding individual expenses and to audit the same and if they conform to the provisions of the budget then issue an individual voucher for the payment of these accounts to the individual to whom they were due.

5. On motion of Boys-Luce the Secretary was directed to extend the invitation of the Society to Doctor W. L. Bierring, President of the American Medical Association to be the guest of the Society at the annual meeting in Battle Creek in September.

6. The Executive Committee spent considerable time and discussion of the policy regarding the dues which are to be charged to members for reinstatement and also of the policy regarding the prorating of dues to members joining during the last nine months of the fiscal year. The matter was laid upon the table and the Secretary instructed to secure legal opinion from Mr. Barbour and to report thereon at the next meeting of the Executive Committee of the Council.

7. Upon motion of Carstens-Luce the Secretary was directed to make certain investigations and to compile data regarding the program of public education and preventive medicine practices in the states of Wisconsin, Minnesota, Illinois and Washington and to report thereon at the September meeting of the Council.

There being no further business the meeting adjourned, subject to the call of the Chairman.

Signed: F. C. WARNSHUIS,
Secretary.

CUTTING HOSPITAL DRUG BILLS.

LOUIS LE FEVRE, M.D.

MUSKOGON, MICHIGAN.

The delivery room and the operating room are parts of a hospital with which most physicians are thoroughly familiar. We are constantly in touch with the equipment available for our use in these places and the purchase of anything new, such as a portable x-ray machine or a pair of chromium plated forceps, will at once attract our attention and comment.

Few of us are as familiar with the pharmacy. It is often tucked away in a dark corner of the basement and made as unobtrusive as possible, as if we considered it something we would like to do without but can't quite get rid of. Perhaps because of the obscurity to which we have relegated the pharmacy, few of us ever see the drugs we prescribe, and fewer still ever see them administered, yet the practice of medicine is dependent more on the proper use of drugs than on any other one thing, not excepting surgery, the often brilliant results of which could not be obtained without the valuable but inconspicuous use of drugs.

Publications in current medical literature of articles on drugs or their uses are not likely to equal more than 10 per cent by weight of the material distributed by the detail men from the drug houses on their newest pharmaceutical preparations. These booklets, pamphlets and papers are generally well written from a literary viewpoint, although the effort to appear scholarly is often overdone by the too frequent use of Latin names where ordinary one syllable English words would do. I am sorry I cannot be so complimentary about the scientific nature of this material. The essence of science is truth. Too often the literature of the detail men is scientific only in its efforts to distract the physician's mind from any truths that might be unfavorable to the purchase of the pharmaceutical that is being pushed for the present.

The manufacturer of a mouth wash, for instance, extols its virtues in language that could be applied equally as well to normal salt solution. Indeed, it owes whatever virtue it has to the salt it contains. The clever advertising literature which so ably presents the scientific nature of this mouth wash to the medical and dental professions, as well as the public, is carefully designed to steer the reader's mind away from the intrusion of any thought that these desirable therapeutic effects could be obtained by anything as easy to prepare as normal salt solution.

Manufacturers of proprietary drugs should not, however, all be classed alike in this respect. A urinary antiseptic, sold only through the medical profession on prescription, makes no claim to fame other than that its antiseptic action is due to orotopine, and the solution in which it is sold is so designed that much larger than usual doses can be given without producing hematuria or upsetting the stomach. We have the opportunity here to judge if the advantages claimed are worth the higher price asked, and, if true, the higher price is really a cheaper price.

If the new interne, in wandering about the hospital on his first day in an earnest effort to become familiar with the new surroundings, should by chance while looking for something else open one of the doors in the basement and find himself in the pharmacy, he would be likely to become lost in an amazing variety of pills, elixirs, tinctures, ointments and tonics, all labeled with names which give no hint of the active principle within, and all so unfamiliar that he is likely to wonder if the pro-

fessor of materia medica did not leave out most of the course.

While searching for a pharmacopœia to shed some intellectual light on his strange surroundings, he discovers the drug house catalogues, neatly piled up to a height of about three feet on one of the shelves. Glancing through these, he finds that many of these preparations about him are duplications of each other, although going by widely different names. If the new interne then becomes interested enough to classify some of these medicines roughly according to therapeutic use and price, he will have, in time, a list which in part may be printed as follows:

Sedatives and Hypnotics

Sodium Ortol	4 cents per capsule
Migraïne tablets	3 cents each
Ipral tablets	1 cent each
Allonal tablets	2½ cents each
Sodium amytal	4 cents each
Amytal	2 cents each
Neurosine	5 cents a dose
Nembutal	4 cents each
Anacin tablets	1 cent each
Empirin with Codeine	2 cents each

Antiseptics

Acridine jelly	70 cents for 2½ ounces
Mercurochrome	\$50.00 for 500 grams
Hexylresorcinol	\$1.00 for 12 ounces
Merthiolate	\$1.00 per gallon

Alkalis

Kalak water	40 cents for 24 ounces
Bisodol	85 cents for 8 ounces
Alcaroid	40 cents per can
Citrocarbonate	85 cents for 8 ounces

Ointments

Husk's Ointment	\$1.20 per pound
Quret Ointment	35 cents small size
	50 cents large size
Unguentine	35 cents a tube
	\$1.25 per pound

Laxatives

Isacen tablets	2 cents each
Caroid and bile tablets	40 cents a box
Pluto water	34 cents a bottle
Crazy water crystals	\$1.10 a package
Abilena water	34 cents a bottle

This is only a partial list of the proprietary preparations found on the shelves of one hospital. They had all been prescribed by physicians for their patients in the hospital. They are, on the whole, extremely expensive as compared with the price of the crude drugs.

Notice the duplications among the sedative and analgesic group. Salts of barbituric acid appear with monotonous regularity in combination with amidopyrine to make something that will put the patient to sleep. Neither of these chemicals is expensive, but when united under one name of sufficient obscurity to hide their identity, they become worth their weight in silver and thereby approximately achieve the dream of the alchemists of the middle ages to transform baser elements into precious ones.

The laxatives are also always a favored field in which to exploit the gullible in the profession. Epsom salts in solution become Pluto water, and sodium sulphate, formerly used chiefly by veterinarians, is now ordered into the human intestinal tract by physicians under the name of Crazy Water Crystals, at an increase in price sufficient to assure its appreciation by all those fortunate enough to be able to afford it.

A solution for this problem, that will at the same time reduce the hospital bills, and simplify the prescribing of drugs in the hospital may be arrived at in the following manner.

A list of drugs available in the hospital should be drawn up and posted at all places in the building where drugs may be prescribed. This list should be classified in some way that will make it easy to find a preparation of a drug for the purpose desired. No preparation other than those which the hospital wishes to see in constant use need appear on this

list. An example, in part, of how this list would appear is as follows:

Sedatives, Hypnotics and Analgesics		
Sodium bromide, 5 grains.....	1/4c	
Chloral hydrate in solution, 5 grains to the dram.....	1/2c	
Cannabis indica (extract), 1/6 grain.....	1/2c	
Tincture hyoscyamus, 30 minims.....	1/2c	
Acetylsalicylic acid, 5 grains.....	.01 each	
Amidopyrine, 5 grains.....	.08 each	
Barbital, 5 grains.....	.02 each	
Tincture belladonna, 10 minims.....	1/2c each	
Codeine sulphate, 1/4 grain.....	.02 each	
Morphine sulphate, 1/4 grain.....	.06 each	
Cocaine hydrochloride, 4% solution.....	.85 a pint	
Laxatives and Cathartics		
Fl. Extract cascara, 1 dram.....	.05 each	
Compound licorice powder, 1 dram.....	.01 each	
Phenolphthalein, 1 grain.....	1/2c	
Aloin, belladonna and strychnine pills.....	.01 each	
Bile salts, U. S. P.....	.01	
Epsom salts, 1 ounce.....	1/5c	
Sodium phosphate, 1 ounce.....	105	
Sodium sulphate, 1/2 ounce.....	1/2c	
Mineral oil, 1 ounce.....	.01	
Alkaline Substances		
Magnesium oxide, 1 dram.....	} All less than .01	
Magnesium carbonate, 45 grains.....		
Bismuth subcarbonate, 8 grains.....		
Calcium carbonate, 10 grains.....		
Sodium bicarbonate, 15 grains.....		
Diuretics		
Caffeine citrate, 5 grains.....	1/5c	
Theobromine and sodium salicylate, 15 grains.....	.01	
Tincture digitalis, 10 minims.....	1/2c	
Potassium nitrate, 8 grains.....	1/4c	
Theophyllina (theocine), 4 grains.....	.04	
Urinary Antiseptics		
Sandalwood oil, 8 minims.....	.04	
Urotropine, 5 grains.....	.02	
Sodium salicylate, 5 grains.....	1/4c	
Salol, 5 grains.....	1/2c	
Heart Stimulants		
Digalen, 1 tablet.....	.01	
Digifolin, 1 ampoule.....	.07	
Tincture digitalis, 10 minims.....	.05	
Adrenaline, 15 minims.....	.10	
Atropine, 1/150 grain.....	1/4c	
Caffeine sodium benzoate, 7 1/2 grain.....	.08 ampoule	
	.01 powder	
Strychnine sulphate, 1/30 grain.....	1/3c	
Ointments		
Vaseline and vaseline gauze.....	1.45 per pound	
Scarlet red ointment, 5%.....	1.50 per pound	
Picric acid ointment.....	1.65 per pound	
Tannic acid ointment, 10%.....	1.00 per pound	
Boric acid ointment.....	1.00 per pound	
Ointment of rose water.....	.50 per pound	
Belladonna ointment.....	1.50 per pound	
Chrysarobine ointment.....	1.50 per pound	

The above list is necessarily incomplete for want of space. Many of the proprietary medicines listed above are useful, but the question the physician must decide is, are they more useful than the same drugs prescribed by their authorized names? It would seem that familiarity with the United States Pharmacopeia, in which are listed hundreds of drugs and their preparations, would make it unnecessary to resort to expensive medicines, sold under trade names which suggest a therapeutic use, but perfectly hide the name of the drug which is to bring about the numerous desirable effects promised.

In the face of a constant well-organized propaganda from the proprietary drug houses, it is not surprising that the busy physician, when called on to prescribe, finds the most accessible parts of his brain filled up with this expensive materia medica. There is an opportunity here for the hospitals to render a small but real service to themselves and their patients. Let the hospital, through its pharmacy and staff, draw up a list of drugs similar to that printed above, but complete enough to cover the field. Only such drugs and their preparations would be included that deserve the recommendation of the staff, and the price and dose should be mentioned. The drugs should be listed according to their therapeutic uses, so that they can be found quickly. Needless to say, no mention need be made of those proprietary prepa-

arations that the hospital finds unnecessarily expensive. Such a list should be posted at each chart desk, and there will serve as reminders to the profession that drugs still exist under their own names, and to many, including myself, such a list will be a real help in selecting the right medicine for the patient.

There will be objections to such a list. Some physicians will feel that they are being told what to prescribe, forgetting that they have been told successfully, in the past, by non-medical detail men. There should be nothing about the list to suggest compulsion. Its whole purpose should be to keep ever before the staff the names of a wide variety of remedies to suit every purpose, from which the physician may choose, feeling that, having done so, he has considered all the suitable drugs available. Those who still prefer expensive proprietary drugs should not be prevented from using them, but they will have to think them up themselves, as their names will not appear on the list.

For the purpose of reducing the chaotic conditions present in prescribing drugs, this paper is written. It is not expected that all physicians will agree with everything said here. The committee realizes that physicians are individualists and that the interests of the patients as well as the progress of the profession will suffer if any hospital should attempt to impose restrictions on the use of drugs. We believe, however, that the barrage of publicity fired at the profession by the drug houses will in part be neutralized by such a list as is herein described, giving impartial information about drugs at the chart desk, the place where it is most needed.

POSTGRADUATE COURSE IN TRAUMATIC,
EMERGENCY AND MINOR SURGERY

Detroit, 1934

Dr. Dow Allard.....	Portsmouth, Ohio
Dr. N. C. Atorothy.....	Detroit, Michigan
Dr. C. H. Bailey.....	East Liverpool, Ohio
Dr. R. Bailey.....	St. Clair Shores, Michigan
Dr. Jos. A. Bakst.....	Detroit, Michigan
Dr. E. J. Byrd.....	Bearden, Arkansas
Dr. A. L. Chapman.....	Detroit, Michigan
Dr. L. H. Darling.....	Lansing, Michigan
Dr. Peter H. Darpin.....	Detroit, Michigan
Dr. G. H. Davis.....	Detroit, Michigan
Dr. John V. Failing.....	Grand Rapids, Michigan
Dr. H. S. Foley.....	Dearborn, Michigan
Dr. J. M. Gettrost.....	Columbus, Ohio
Dr. Don V. Hargrave.....	Eaton Rapids, Michigan
Dr. H. M. Jardine.....	West Branch, Michigan
Dr. T. J. Kane.....	Muskegon, Michigan
Dr. Edw. Maire.....	Grosse Pte. Park, Michigan
Dr. Nur M. Malik.....	Detroit, Michigan
Dr. W. Frank Maxwell.....	Toledo, Ohio
Dr. J. A. McLandress.....	Saginaw, Michigan
Dr. Howard H. McNeill.....	Pontiac, Michigan
Dr. L. D. McRae.....	Gagetown, Michigan
Dr. E. N. Mendenhall.....	Fort Wayne, Indiana
Dr. Carl A. Mitchell.....	Benton Harbor, Michigan
Dr. John H. Nauman.....	Martin's Ferry, Ohio
Dr. W. H. Norton.....	Mount Clemens, Michigan
Dr. H. C. O'Roark.....	Portsmouth, Ohio
Dr. Russell Palmer.....	St. James, Michigan
Dr. A. W. Petersohn.....	Battle Creek, Michigan
Dr. Donald Pollock.....	Yale, Michigan
Dr. H. J. Prall.....	Lansing, Michigan
Dr. O. W. Rapp.....	Fredericktown, Ohio
Dr. Carl S. Ratigan.....	Dearborn, Michigan
Dr. R. B. Robins.....	Camden, Arkansas
Dr. Fred L. Robinson.....	Dearborn, Michigan
Dr. Fenton M. Sanger.....	Oklahoma City, Okla.
Dr. Myron E. Speck.....	Cleveland, Ohio
Dr. M. Henry Speck.....	Youngstown, Ohio

Dr. Fredk. A. Sturm.....St. Clair Shores, Michigan
 Dr. Thomas Wilensky.....Eaton Rapids, Michigan
 Dr. Harold L. Williams.....Norwalk, Ohio

PRACTITIONERS' COURSE

Detroit, 1934

Dr. N. C. Atorothy.....Detroit, Michigan
 Dr. R. Bailey.....St. Clair Shores, Michigan
 Dr. J. C. S. Battley.....Port Huron, Michigan
 Dr. Walter L. Baumann.....Detroit, Michigan
 Dr. L. C. Blake.....Mt. Vernon, Ohio
 Dr. W. R. Blume.....Minden, Nebraska
 Dr. O. H. Bruegel.....East Lansing, Michigan
 Dr. E. J. Byrd.....Bearden, Arkansas
 Dr. A. L. Chapman.....Detroit, Michigan
 Dr. Peter H. Darpin.....Detroit, Michigan
 Dr. G. H. Davis.....Detroit, Michigan
 Dr. K. W. Dick.....Carsonville, Michigan
 Dr. John F. Failing.....Grand Rapids, Michigan
 Dr. H. S. Foley.....Dcarborn, Michigan
 Dr. Neil A. Gates.....Ann Arbor, Michigan
 Dr. J. M. Gettrost.....Columbus, Ohio
 Dr. G. I. Goodrich.....Dover, Ohio
 Dr. James M. Harsha.....Washington C. H., Ohio
 Dr. J. I. Humphries.....Windsor, Ontario
 Dr. John Kremer.....Detroit, Michigan
 Dr. Edw. D. Maire.....Grosse Pte. Park, Michigan
 Dr. Nur M. Malik.....Detroit, Michigan
 Dr. E. G. McConnell.....Lansing, Michigan
 Dr. Howard H. McNeill.....Pontiac, Michigan
 Dr. L. D. McRae.....Gagetown, Michigan
 Dr. Jeannette C. Miller.....Massillon, Ohio
 Dr. H. E. Morgan.....Fredonia, Kansas
 Dr. Russell Palmer.....St. James, Michigan
 Dr. P. W. Patterson.....Grand Rapids, Michigan
 Dr. A. W. Petersohn.....Battle Creek, Michigan
 Dr. Donald Pollock.....Yale, Michigan
 Dr. E. L. Robb.....Detroit, Michigan
 Dr. Colin G. Robertson.....Sandusky, Michigan
 Dr. Fred L. Robinson.....Dcarborn, Michigan
 Dr. E. C. Rumer.....Flint, Michigan
 Dr. Burrell Russell.....New Philadelphia, Ohio
 Dr. Fenton M. Sanger.....Oklahoma City, Okla.
 Dr. Chas. Sawers.....Watford, Ontario
 Dr. Arthur Shagrin.....Cleveland, Ohio
 Dr. U. G. Spohn.....Fairgrove, Michigan
 Dr. Frederick A. Sturm.....St. Clair Shores, Michigan
 Dr. J. P. Thomas.....Detroit, Michigan
 Dr. T. P. Vanderzahn.....Lansing, Michigan
 Dr. J. D. Vyn.....Grand Rapids, Michigan
 Dr. W. J. Wall.....Davison, Michigan
 Dr. H. L. Williams.....Norwalk, Ohio
 Dr. Mildred C. Williams.....Detroit, Michigan

last but not least, Dr. Fred Cole gave a very interesting talk on Urethral Infections and presented movies of transurethral resection of the Prostate Gland revealing the speaker as the operator. Following the talks, there were general discussions.

There were about forty members in attendance and the program was thoroughly enjoyed by all and it was hoped we would have more such meetings.

C. G. CLIPPERT, M.D.,
 Secretary, O.M.C.O.R.O.

GRAND TRAVERSE-LEELANAU COUNTY

As part of the program of the Committee on Preventive Medicine of the Michigan State Medical Society, the Grand Traverse-Leelanau County Medical Society met in regular session at the Park Place Hotel, Traverse City, on May 8, 1934.

Thirty-two physicians from the surrounding region sat down to a steak dinner, following which President Hastings introduced members of the team which were sent to us by courtesy of the W. K. Kellogg Foundation.

Dr. John E. Gordon, Detroit, led the program, covering the scientific side of the problem, by giving a very fine talk on "Differential Diagnosis in the Acute Communicable Disease," covering in a very thorough manner Diphtheria, Tonsillitis, Vincent's Angina, Scarlet Fever, Septic Sore Throat, Abscess, and Agranulocytosis. He particularly emphasized examination behind the soft palate and palpation of the posterior pharynx as diagnostic measures.

Dr. L. O. Geib, Detroit, chairman of the Preventive Medicine Committee of the Michigan State Medical Society, spoke of the proposed program of the Society in regard to public health and stated that this meeting was part of that program. He particularly emphasized that both the public and the medical man must be made more conversant with public health problems.

Dr. Henry F. Vaughan, Detroit, presented an exhaustive and thorough review of past and present methods of control of public health, especially in relation to contagious diseases. He then presented, by lantern slide illustrations, a plan of contagious disease control, as conducted by the City of Detroit, showing the greater financial return to the physician resulting from its operation, and also the greater results obtained from a public health standpoint. He stated the operation of this plan meant a material reduction in the cost of illness to both the public and the county or city agencies. He also spoke of methods whereby this plan could be applied to our community. He stated that one of the objects of the Michigan State Medical Society in forming this committee was to have the physician practice preventive as well as curative medicine.

Dr. G. M. Byington, Battle Creek, spoke of the participation of the W. K. Kellogg Foundation in this preventive medicine campaign and related how the plan works when applied to rural communities.

Dr. Roy Holmes, Muskegon, and Dr. Keyport, Grayling, members of the Preventive Medicine Committee, spoke briefly on various phases of this work.

At the conclusion of the program, much general discussion took place, particularly as regards the local conditions in Grand Traverse and Leelanau Counties and to methods which could be applied whereby some modification of this plan could be made operable here. Members of the team gave much valuable advice in this discussion.

The regular monthly meeting of the Grand Traverse-Leelanau County Medical Society was held

COUNTY SOCIETIES

O.M.C.O.R.O. COUNTY

The regular meeting of the O.M.C.O.R.O. County Medical Society was held at Kenyons' Resort on Sage Lake near West Branch, May 23, at 6 p. m., at which time the Bay County Medical Society members attended as invited guests.

The afternoon was spent in fishing and golf and following the banquet at 6 p. m. a very fine program was presented under the Michigan State Medical Society Post-graduate Conference in coöperation with the Department of Post-graduate Medicine, University of Michigan. The meeting was in charge of the 10th District Councilor, Dr. Paul R. Urnston. Dr. W. H. Marshall gave a very fine instructive talk on Hypertension; also Dr. L. J. Hirschman gave a very fine instructive and illustrated talk on the Common Rectal Conditions and Treatment. And,

July 10, 1934, at the J. D. Munson Hospital, fifteen members being present.

Dr. E. B. Minor, as delegate to the special session of the House of Delegates, reported relative to the Health Insurance Plan of the Michigan State Medical Society. Considerable discussion took place with no action at the present time.

After some discussion, our local Preventive Medicine Committee, with Dr. B. B. Bushong of Kalkaska as chairman, was instructed to formulate a plan applicable to our community and report at the next regular meeting.

Dr. Norm Kretchmer, Ann Arbor, cited four recent cases of intra-abdominal hemorrhage due to rupture of a corpus luteum cyst. He stated that follicular hemorrhage could be considered an important clinical entity and if properly diagnosed could be treated conservatively, the chief diagnostic point being that the hemorrhage occurs from four-teen to sixteen days post-menstrual.

Dr. R. E. Hastings reported that he is leaving us, being offered a position in the Department of Surgery of the University Hospital.

E. F. SLADEK, *Secretary*.

MECOSTA COUNTY

The regular meeting of the Mecosta County Medical Society was held in the Western Hotel, Big Rapids, Mich., Tuesday, July 10, 1934, at 6:30 o'clock p. m., the guests of Drs. Grieve and East.

Present: Dr. Bunce, Grieve, East, Campbell, Kelsey, Chess, Franklin, Kilmer, Treynor, MacIntyre, Yeo.

Dentists: Pryor, Zetterstedt, Rogers, Hayes.

Guest: Dr. A. R. Hufford of Grand Rapids, Michigan.

The minutes of the last regular meeting were read and approved as read.

Report of Resolutions Committee was adopted as read and spread upon the minutes of this meeting, and a copy ordered furnished Mrs. W. T. Dodge.

"WHEREAS, it has pleased Almighty God to remove from our midst one of our beloved members in the person of Dr. William T. Dodge,

BE IT RESOLVED, that in the passing of our associate of many years the Society in particular and the community at large has lost a highly respected citizen who always stood ready to aid his fellow man and the members of the profession which he so dearly loved. In the capacity of Surgeon to Mercy Hospital, Big Rapids, Michigan, his services were of inestimable value; and the experience acquired enables him to be counted with the outstanding surgeons of Michigan. Dr. Dodge served as Surgeon of the 2nd Infantry, Michigan National Guards, and subsequently became Chief Surgeon, a position which he held for several years. During the World War he served as Major and Surgeon at Camp Sherman, Chillicothe, Ohio, until the close of the war. He filled many professional and civil positions during his residence in this city, with honor, and his integrity and ability was unquestioned.

BE IT FURTHER RESOLVED that this resolution be spread upon the minutes of this Society and a copy thereof be furnished the bereaved widow, Mrs. Anna Dodge, Reed City, Michigan. May the memory of our association with our departed brother always be an inspiration to us to emulate his example. "We shall meet, but we will miss him. There will be one vacant chair."

"Vale, Doctor Dodge."

JOHN L. BURKART, M.D.
GORDON H. YEO, M.D.
ARTHUR ZETTERSTEDT, D.D.S.

The meeting was then turned over to the Program Committee. Dr. Chess, chairman, introduced our guest, Dr. A. R. Hufford of Grand Rapids, Mich., who delivered a very instructive and interesting paper on "Gastric and Other Ulcers of the Digestive Tract." X-ray films materially increased the interest.

Discussion on the subject by various members of the Society and questions propounded were all very clearly and freely answered. Dr. Hufford in his re-

marks suggested that men were much more frequently afflicted than women. This opinion was based upon his observation.

The regular order of business was resumed.

A rising vote of thanks was tendered the speaker of the evening and our hosts, Drs. Grieve and East.

There being no further business, the meeting was adjourned.

JAMES B. CAMPBELL, *President*.

JOHN L. BURKART, *Secretary-Treasurer*.

SHIAWASSEE COUNTY

Dr. E. H. Bailey, of Corunna, was honored by the society at its meeting on June 21, it being the occasion of the fiftieth anniversary of his graduation from the Detroit College of Medicine. Dr. W. F. Weinkauff of Corunna was toastmaster and Dr. A. M. Hume was the principal speaker.

Dr. W. E. Ward read the poem by Oliver Wendell Holmes "The Morning Visit," and Dr. J. J. Haviland contributed "The Boys," also by Holmes.

Dr. C. A. Crane, of Corunna, presented Dr. Bailey with an electric clock, and music was furnished by Lynch & Son.

Dr. Bailey has practiced nearly all of the fifty years in Corunna, and he entertained the gathering with reminiscences of the early days when there were no good roads and the practice of medicine was not what it is today.

W. E. WARD, *Secretary-Treasurer*.

WOMAN'S AUXILIARY, MICHIGAN STATE MEDICAL SOCIETY

MRS. ELMER L. WHITNEY, *President*
18224 Wildemere Ave., Detroit

MRS. C. L. STRAITH, *Secretary-Treasurer*
19305 Berkley Road, Detroit

Dear Auxiliary Members:

Greetings from your Vice President!

I am happy to send greetings to the Auxiliary members of the Michigan State Medical Society. We are like one big family, all doctors' wives with cares great and small. To be as a family we must know each other better. The State Convention in September is an ideal place to meet and see one another. I hope you are planning to attend.

Battle Creek is honored to be hostess to the State Convention September 12-13, 1934. We are planning so many things and hope many Auxiliary members will come. Battle Creek is known as the "Health City of Michigan" and everyone should be interested in our beautiful Sanitarium, the Kellogg and Postum Plants, the Kellogg Foundation that sponsors the Ann I. Kellogg School, the only one of its kind in the United States. These interesting places alone should bring many here, but we have also planned teas and luncheons. The entire program will be announced later.

Battle Creek joins me in sending greetings, and let's make the slogan, "We will see you in Battle Creek in the fall." I'll be looking for every doctor's wife in Michigan.

Sincerely,

(Mrs. W. R.) LOUISE CHYNOWETH.

September 11-12-13. The sanitarium will be our headquarters. Registration all three days. Special rates will be available to guests staying there.

Wednesday, September 12. 12:30 Noon. Luncheon

at Kellogg Hotel, for Board members and county presidents meeting following.

3:30 p. m. Tea, place to be announced later.

7:00 p. m. Dinner and bridge at Battle Creek Country Club.

Thursday, September 13. 10 a. m. General meeting and election of officers of medical auxiliary in mezzanine parlors at Sanitarium, followed by 12:30 luncheon in main dining room. Mrs. G. Henry Mundt from Chicago will be the guest speaker.

THE CLEVELAND SESSION OF THE WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION

Convention Notes of the 12th Annual Meeting
June 11-16, 1934

The Woman's Auxiliary to the A. M. A., assisted by a group of Cleveland doctors' wives, planned the program for all women visitors and extended a hearty greeting to all members of the Auxiliary, guests and women members of the A. M. A. All meetings and entertainments were open to everyone and a special invitation was extended to those not conversant with the aims and work of the Auxiliary.

The Auxiliary maintained its headquarters at the Carter Hotel.

On Monday, June 11, the National executive board met for business and luncheon. A most delightful dinner and reception honoring Past Presidents, National Board, delegates and wives of officers and delegates of the A. M. A. was held in the evening.

Preceding the opening of the general business session, at 8:15 Tuesday morning, a "Southern Breakfast" was served in the French Room of the Carter Hotel, with Mrs. Southgate Leigh, of Norfolk, Va.; Mrs. James Blake, President of the Auxiliary to the A. M. A., and Mrs. Robert Tomlinson, President-elect, acting as hostesses. Several short talks were given by members of the Southern Medical Association and officers of the Southern Medical Auxiliary.

At 10 a. m. the first general meeting was called to order by Mrs. James Blake, president. After the invocation by Rev. Mr. Lohr, pastor of the Old Stone Church, Ohio not having an organized Auxiliary, Mrs. Clyde L. Cummer, wife of the president of the Ohio State Medical Association, welcomed the Auxiliary to Cleveland and extended greetings to all women attending the convention. The response was given by our own Mrs. Elmer L. Whitney, of Detroit.

A memorial service followed, conducted by Mrs. Frank Haggard, of San Antonio, Texas, who requested each State President to place the names of deceased members of their Auxiliary in the National Obituary Register. (Our State President entered the names of three Michigan members.) Mrs. C. P. Corn, of Greenville, South Carolina, sang "There is No Death."

After the report of the committee on credentials and registration and roll call of State Auxiliaries, the President's report was read by the president, Mrs. James Blake. She suggested: "Undertake less, accomplish more." "Understand what the activity is and then what you as an Auxiliary are trying to do with it."

The report of the President-elect followed listing her year's activities and telling of work to be done during the coming year in New York and New England States not yet organized.

Reports of other officers and standing committee chairmen were given followed by the recommendations which had been presented to the Board.

The beautiful Lake Shore Hotel, situated on a high bluff overlooking Lake Erie was the setting for the luncheon, style show and bridge, which took place Tuesday afternoon. Tables for bridge were arranged in the ballroom and on the terrace overlooking the lake.

At 8 o'clock Tuesday evening the opening general meeting of the A. M. A. was held in the Music Hall of the Cleveland Public Auditorium. Addresses of welcome were given by the Hon. Harry L. Davis, Mayor of Cleveland, Dr. A. A. Jenkins, President of the Academy of Medicine of Cleveland, and Dr. C. L. Cummer, President of the Ohio State Medical Association, preceding the introduction and installation of President-Elect Walter L. Bierring, of Des Moines, Iowa.

The general meeting on Wednesday, June 13, was called at 9 a. m. with Mrs. Blake presiding. The following officers were elected:

President, Mrs. Robt. Tomlinson, Wilmington, Del.
President-elect, Mrs. Rogers N. Herbert, Nashville, Tenn.
First Vice President, Mrs. Rollo K. Packard, Chicago, Ill.
Second Vice President, Mrs. Otis Lamson, Seattle, Wash.
Third Vice President, Mrs. J. Bonar White, Atlanta, Ga.
Fourth Vice President, Mrs. William Lett Harris, Norfolk, Va.

Secretary, Mrs. Elmer L. Whitney, Detroit, Mich.

Treasurer, Mrs. Eben J. Carey, Milwaukee, Wis.

Michigan is again honored by having a member elected to the National Board. Mrs. Whitney, of Detroit, President of the Auxiliary to the Michigan State Medical Association, was elected Secretary of the National. This is not the first time that Mrs. Whitney has served in a National capacity. In 1930-31, she was chairman of Legislation.

Registration to 11 o'clock Wednesday totaled 795.

A very interesting and instructive address, "The Technique of Putting a Bill through a State Legislature," was given by Dr. Junius B. Harris, of California, which was followed by an address by Dr. W. W. Bauer, of Chicago, Director of the Bureau of Health and Public Instruction of the A. M. A. Dr. Bauer told of sending out questionnaires (to 268 Auxiliaries and receiving only 185 replies) as to County Auxiliary projects. "Getting information from local officers is a real, life-sized job," said Dr. Bauer. Let's help by filling out and returning questionnaires sent out by the A. M. A. and show what Michigan is doing. A résumé of what a few Auxiliaries are doing:

1. Prepares obstetrical packs for the Junior League Closet.
2. Has a Student Loan Fund.
3. Sews for hospitals.
4. Conducts an educational campaign on maternal care.
5. Sews for hospitals and needy children at a camp.
6. Is sponsoring and carrying on a nutrition class.
7. Placed *Hygeia* in schools.
8. Sponsors Child Health Week, having programs in all schools.
9. Sponsors school for handicapped children.
10. Has a Medical Scholarship.
11. Places educational materials at County Fairs.
12. A Southern Auxiliary sponsors a weed eradication campaign.

Dr. Bauer suggested that the Auxiliaries supervise the selection of good health literature by the local libraries.

The colorful Rainbow Room, of the Carter Hotel, was the scene of the Woman's Auxiliary luncheon Wednesday noon. Among the "after dinner" speakers were Mrs. Tomlinson, the newly elected Auxiliary president, and Dr. Bierring, the A. M. A. president.

On Wednesday afternoon the State reports were given. Highlights from a few State reports:

ALABAMA—"Jefferson County is sponsoring a health contest in the elementary schools. A silver cup is awarded on 'Child Health Day' to the school showing the greatest improvement among its pupils in all phases of health."

ARKANSAS—"Our A. M. A. Study envelopes are used throughout the state by the P. T. A. groups, Federated Clubs, Red Cross workers, and paid and unpaid workers in the White House Conference group, and bound in the libraries."

CALIFORNIA—"The most important accomplishment of the year has been the organization of a group representing the Sacramento Medical Society, Department of Adult Education in the Sacramento Schools—the Sacramento Health Department—the P. T. A.—American Legion, State Board of Education—to work out a program of Adult Health Education."

COLORADO—"Christmas boxes and stockings filled for distribution in hospital wards. Surgical dressings for hospitals."

DISTRICT OF COLUMBIA—Some typical programs of this progressive group: 1. Review of the History of the National Auxiliary, as well as our own; 2. The new Food and Drug Act Bill; 3. Musical by our own medical talent.

FLORIDA—"Other philanthropic work done by county groups has been: Milk funds for underprivileged children; Christmas stockings for local trees; tubercular clinic; collecting samples from doctors' offices for colored charity."

ILLINOIS—"With a full realization of why we as an auxiliary are able to report the largest number of counties organized with the largest membership, with a board of directors having so recently completed their duties to the satisfaction of their president, I wish to pay tribute to the powers that have made this possible and that make even our existence worth while.—*Our Doctors and Husbands.*"

IOWA—"Our outstanding work for the year has been our printed program suggestions and our health essay contest which we sponsored. . . . If we have in a small way helped the medical profession to gain a surer footing with the State Department of Public Instruction then our efforts have not been in vain."

KANSAS—"We consider our biggest piece of educational work, the work of the Legislative Department. Our State Chairman investigated the Pure Food and Drug Act and has written a fine article on this subject, which was given at the mid-winter State Board meeting, and at many civic club meetings.—The Men's Advisory Board of the state asked us to investigate legislation and to make a map of our state, which would show the locations of the doctors and auxiliary members in respect to their representatives and senators. The auxiliary's duty was to bring out the feeling of the state representatives and senators in respect to the medical profession, on such subjects as the Basic Science Law, their religion, their family physicians and their specialists. Much can be gained if we are informed as to these qualifications of the state representatives and senators. We know at once whether they are in sympathy with Christian Scientists and osteopaths or with the medical profession."

NORTH CAROLINA—"The upkeep of a bed at our State Sanatorium is our pet philanthropic project."

OREGON—"Since the organization of the Woman's Auxiliary to the Oregon State Medical Society a Basic Science Law was successfully passed in the 1933 Legislature. This act has long been fought for by the State Medical Society and defeated several times, but undoubtedly the assistance of the auxiliary finally brought success. While celebrating this great event for scientific medicine in Oregon, we were suddenly faced with the fact that a group of cultists, with

the lowest standard of education known, had attacked our Basic Science Law with a petition to have it repealed at the general election in November. This would not be so bad if it were a simple repeal of the Basic Science Law but their petition embodies in itself an amendment to the Constitution of Oregon whereby all medical legislation and health laws heretofore existing are repealed and the practice of the healing art is thrown wide open to one and all. Therefore, you will see that our Woman's Auxiliary has before it this summer and fall the greatest fight and noblest work we have yet undertaken."

PENNSYLVANIA—"A few of the larger auxiliaries have Junior members—they have been active in meeting and convincing the wives of the younger doctors that the auxiliary is a worthwhile group and it is their duty to join."

TEXAS—"Our main objective has been child welfare—giving charity only where charity is needed."

UTAH—"We are trying to sell our idea as a necessity for the doctors to stick together and hold up scientific work in contradistinction to quackery."

WISCONSIN—"Six County Auxiliaries have the use of radio stations for health programs. A fifteen minute radio talk on some health subject is given each week by the Executive Secretary of the State Auxiliary."

It was evident from the fine reports from the well-organized states that definite programs were under way.

At 8:15 p. m. Wednesday, the Ohio State Medical Association and the Academy of Medicine of Cleveland were hosts to the women guests and A. M. A. members at a Musicales and informal reception at the Allen Memorial Medical Library. After the program refreshments were served in the supper room. Guests were cordially invited to inspect the beautiful building and the collections of rare books and interesting museum articles.

The final business session, at 11 a. m. Thursday, followed conference meetings on *Hygeia* and Public Relations, and a post-convention Board meeting with Mrs. Robert Tomlinson presiding. Committee appointments were announced and the presentation of plans for program of work for 1934-35 was given by Mrs. Tomlinson.

The social program was climaxed with a luncheon at the beautiful Country Club on Lander Road, a Style Show in the Clubhouse and around the swimming pool, below the terrace, and on the return trip the guests enjoyed a garden party at Glenallen, estate of Mr. and Mrs. Francis Fleury Prentiss.

That evening the annual "Bring-Your-Husband" dinner was held at the Carter Hotel. This dinner, which was sponsored by the Woman's Auxiliary to the A. M. A. and the Women's Entertainment Committee of the Academy of Medicine, occurred prior to the President's reception and ball, which was held in one of the most delightful of halls (Hotel Cleveland), and the music and color of the occasion were brilliant.

The 13th Annual Meeting will be held in June, 1935, in Atlantic City:

*"Where the long surges heave and break foaming along the glittering shore,
And laughing maidens often take a header midst the breakers' roar."*

Study Material for County Groups:

A. M. A. Study Envelopes available at A. M. A. office, Chicago.

"The First Twelve Years." Write for copies—Mrs. James Blake, Hopkins, Minn.

MRS. LLOYD C. HARVIE

Chairman of Press and Publicity
Woman's Auxiliary to the
Michigan State Medical Society.

PHARMACOLOGIC ACTION OF BARBITURATES: THEIR USE IN NEURO-PSYCHIATRIC CONDITIONS

Carl Phillip Wagner, Hartford, Conn., discusses the various effects and uses of the barbiturates and states that, though usually employed for their sedative action, the barbiturates influence almost every system of the body, and their various side actions should be considered in relation to the general condition of the patient. The longer acting drugs are eliminated slowly and the cumulative effect of long-continued usage may lead to a delirious reaction or to other toxic symptoms. The psychologic reactions, which are readily induced by the shorter acting drugs, usually help in gaining coöperation from the patient and may aid in interrupting the course of a psychosis and hasten recovery. If the drug is given over a long period, the histologic changes produced by the administration of large doses may lead to permanent impairment of function. The author treated thirty-seven neuropsychiatric patients by the administration of small doses of sodium amytal. Almost without exception he obtained better coöpera-

tion from negativistic patients for a period of from several minutes to several hours after the administration of the drug. During the time the patient was under the influence of the drug, psychotherapy in the form of reassurance and suggestion was employed. Seventeen of these patients showed improvement from the time the drug was first administered. Fourteen continued to improve; five of these left the hospital before they had recovered completely. In three the psychosis again became stationary, but at a higher level than before the treatment was started. Twenty patients again regressed to their former level following the initial period of coöperation, and the treatment was discontinued.—*Journal A. M. A.*

PROSTATIC PROBLEM: REVIEW BASED ON DEVELOPMENTS OF THE PAST THREE YEARS

Oswald Swinney Lowsley, New York, believes that vesical neck resection has a definite place in the armamentarium of the profession for dealing with certain types of enlargements at the vesical orifice. In fact, the new instruments recently developed have materially widened the scope of the Young punch. When successful, this procedure is economical for the patient and gratifying to his physician. It is unwise to attempt this procedure on massive adenomatous prostates. It is particularly illogical and improper to remove partially a prostate filled with pus which is being absorbed because of the fact that the tubules are sealed off, and it becomes a serious focus of infection. On the other hand, it is ideal for patients suffering from carcinoma of the prostate, small projections from the floor of the vesical orifice and fibrous bars. This operation is far from being an office procedure; the avalanche of statistics seems to indicate that many patients are being operated on who do not need it. It is just as important to safeguard a case suitable for vesical neck resection as any other prostatic case. All the usual preoperative tests and maneuvers for improving the patient's general physical condition should be performed. Patients on whom vesical neck resection has been performed are subject to various complications (incontinence, hemorrhage, pelvic cellulitis, peritonitis, epididymitis and recurrence). The mortality rate in the author's series of eighty-nine cases was 10.11 per cent, which is approximately the same as that of his suprapubic prostatectomies. The lowest mortality rate, 4.8 per cent, occurred in his series of 535 perineal prostatectomies for benign adenomas.—*Journal A. M. A.*

ACQUIRED SENSITIZATION TO SODIUM ISOAMYLETHYLBARBITURATE (SODIUM AMYTAL), AS EVIDENCED BY CUTANEOUS ERUPTIONS

ALFRED M. LANGENBACH, St. Louis, reports four cases in which a sensitivity to sodium isoamylethylbarbiturate developed as evidenced by skin eruptions. These eruptions were distributed chiefly on the face, neck, arms, hands and mucous membranes of the lips and mouth. None of the cases cited showed any sensitivity to the drug when it was first administered. The sensitivity developed during a period of from eight to fourteen months after the drug had been taken and then discontinued. The primary use of the drug ranged from nine months to two years. The average 3 grain (0.2 Gm.) dose was never exceeded in three cases; 12 grains (0.8 Gm.) was used in one case during a period of eight hours. This sensitivity differs from that previously noted in that it does not extend to other barbiturates.—*Journal A. M. A.* (April 28, 1934).

Battle Creek—The Place of Our 1934 Meeting

BATTLE CREEK, MICHIGAN

Tradition has it that on the banks of the Kalamazoo River, near the entrance of a creek, a fight took place a hundred years ago between a couple surveyors and a couple Indians. Who won the argument in this disagreement history does not say, but the result is that on this spot a village began to grow, which later was named Battle Creek, and today Battle Creek has grown into the best known city of its size in the world. This much is freely admitted.

Located in southern Michigan about midway between Detroit and Chicago, this city of diversified interests lies in the valley of its rivers, and is surrounded by its manufacturing districts and its outlying farming regions. Ample in area, it knows no crowding or congestion.

The fame that is Battle Creek's is notable by reason of the fact that its interests are diversified. While in every country in the world its name is synonymous with health, contrary to popular belief it has many notable achievements to its credit sufficient to make its name world famous.

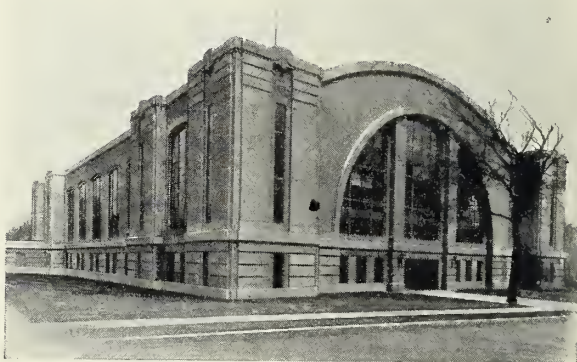
While Minneapolis has its flour, Detroit its automobiles, Grand Rapids its furniture, and Pittsburgh its steel, Battle Creek besides its health fame has its breakfast foods, its printing presses, its threshing machinery, its gas stoves and many another leading industry in its line.

These different manufacturing concerns with a host of smaller ones are of a stable nature, and, except for seasonal fluctuations, operate on as sound a footing as can be found anywhere in the country.

Battle Creek is at the crossroads of two great railway systems, the New York Central and the Grand Trunk Western Lines. The Grand Trunk has its divisional headquarters in Battle Creek, and in addition operates here one of the largest car and locomotive shops in the country. The rail service for both passenger and freight trains in and out of Battle Creek makes a showing not witnessed in many cities much larger. Quick and easy transportation is also afforded by several lines of passenger busses, while Michigan's splendid system of

paved roads makes travel to Battle Creek quick and delightful.

With a population of 50,000—90 per cent of whom are American born—75 per cent own their own homes. Its shaded streets and well kept lawns are especially noticeable



UNION BUILDING. CIVIC SPORTS.

to the visitor, and it covers an area of some twelve square miles. Within its limits are one hundred and seventy-five miles of streets and boulevards, forty-five miles of which are paved; a modern water supply with two independent pumping systems, and with the usual sewers, gas mains, electric lights and power, and a modern automatic telephone system.

PARKS

Its sixteen parks are of unusual beauty, covering five hundred ninety-six acres of area including public playgrounds for baseball, tennis, football and other outdoor sports. Irving park is noted for its rock gardens, its artistic bridges and scenic vistas and is full of lovely surprises.

Battle Creek's hardy pioneers, who dared the dangers and withstood the hardships of a new country, laid the foundation for a city where religion, patriotism and education should be made the keystone in the arch of its later triumphs, and this was but natural to its New England forebears.

SCHOOLS

The public schools of Battle Creek are outstanding and the buildings and equip-



SILHOUETTE SKYLINE AND ORIGINAL SETTLEMENT

ment of its educational system are far in advance of most cities of its size. One of its newer units, the Ann J. Kellogg school, is the first school in America to achieve the standards set by President Hoover in his plan to give every child a chance to be healthy as well as to obtain an education. Built to house children which normally should come to a grade school, it is departmentized to include children that are crippled, the hard of hearing, the impaired sight, the low grade mentally, the gifted child, and the problem child. Its fame as a unique school is already gone out and it is being watched by educators from all over the world.

BATTLE CREEK COLLEGE

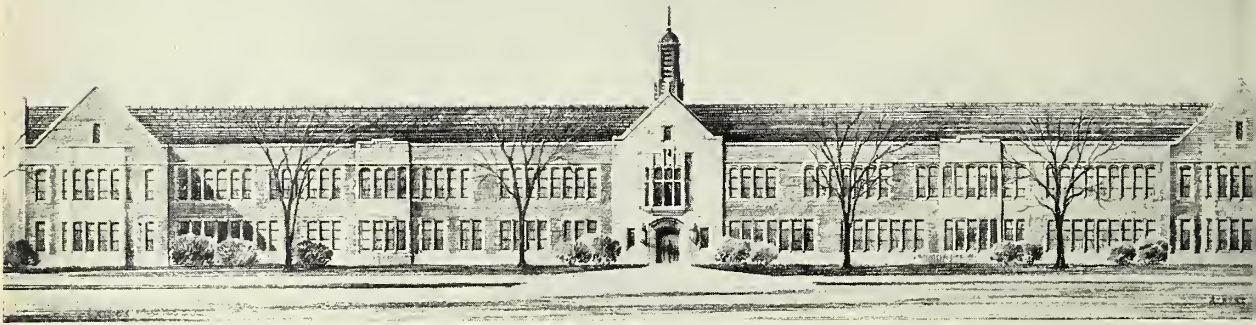
As an institution of higher learning, with an enrollment of 700 students, this college includes the liberal arts, domestic science,

music, physical education, and nurses' training, and has the distinction of being the only institution of its kind where biological living is made the basis of every branch of learning. Bachelor of arts and bachelor of science degrees are conferred.

CHURCHES

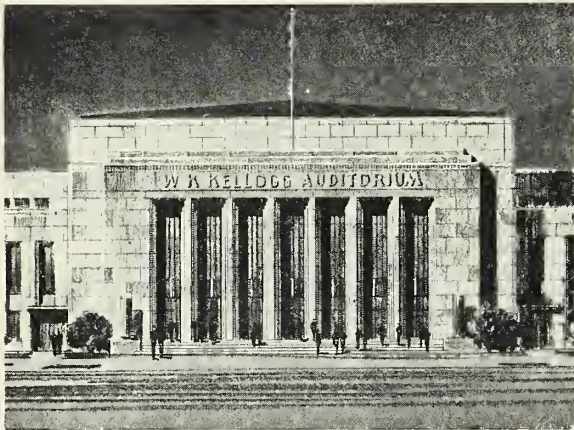
Several new church edifices, of more than ordinary architectural excellence, as well as pretentious service requirements, give homes to a large range of religious denominations.

In recent years two skyscraper bank buildings have changed the view of the city to that of a metropolitan center. The tall stately towers of these buildings rising over twenty stories, together with the City National Bank building, furnish housing for bank and trust companies to carry on the



ANN J. KELLOGG SCHOOL FOR UNDERPRIVILEGED AND SPECIAL CHILDREN

varied financial activities of a busy community.



W. K. KELLOGG AUDITORIUM

LAKES

Battle Creek is in close proximity to some eighty-five lakes. Four of these are within ten minutes drive, while Gull lake fifteen miles to the northwest is one of the best known resort waters in southern Michigan. Its shore line is noted for its many gorgeous estates with their beautiful landscapes, while its waters afford water sports and boating to a large concourse of enthusiasts.

AIR PORT

At the southwestern edge of the city of Battle Creek, is located the Kellogg airport with one of the finest of landing fields and affording service for air mail and passenger travel.

BOY SCOUTS

In a club house overlooking the beautiful Irving Park, the Boy Scout Council is

housed in what is said to be the finest boys club in America representing an investment of \$350,000. Boy Scouts numbering 2,270 are affiliated with this Council, which has given Battle Creek the Gore cup prize for several years back.

CONVENTIONS

Because of its geographical position and also its exceptional transportation facilities Battle Creek is fast becoming the Convention City of Michigan. The recent completion of the Kellogg Auditorium, a gift to the city, has made it possible for large conventions to be housed amid ideal surroundings. Its central location and close proximity to hotels and the business district leaves nothing to be desired from the standpoint of convenience and convention excellence.

THE CALHOUN COUNTY MEDICAL SOCIETY

The Calhoun County Medical Society was first organized in Marshall on November 11, 1839. A Constitution and By-laws was adopted and officers elected: Luther W. Hart, Marshall, President; D. B. Crane, Albion, Vice President; J. H. Montgomery, Marshall, Secretary; Wm. Thompson, Marshall, Treasurer; Censors: Drs. Crane, Montgomery, Bevitt, Sibley, and Greene. The following were charter members in order of their arrival and settlement in Calhoun County: A. L. Hays, Marshall, 1831; Luther B. Hart, Marshall, 1832; John P. Greene and Joseph Sibley, Marshall, 1834; J. H. Montgomery, Marshall, 1836; D. B. Crane, Albion; Daniel Hudson, Edwin D.

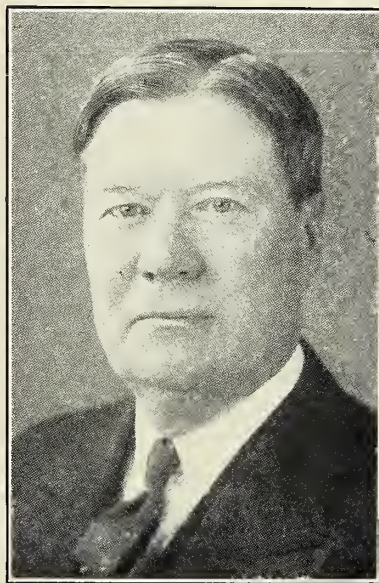
Bevitt, Wm. Thompson, and L. J. Aylesworth, Marshall; Rob't W. Porter, Mar-engo; Henry Porter, Tekonsha; Vernon Parks, D. Nims, and E. Allen, Homer; Albert W. Lathrop, Marshall; Frederick W. Wheelock, Albion; and T. C. Hurd, Bur-

pointed Drs. French, Stoddard and Phelps. A recess was taken till 4 p. m. to give the committee time to prepare a report.

On reassembling at 4 p. m. the committee reported a Constitution and set of By-



DR. WILFRED HAUGHEY
Secretary Calhoun County Medical Society



DR. A. E. MCGREGOR
President Calhoun County Medical Society

lington. There were no charter members for Battle Creek, which, at that time, was a mere hamlet. This was a flourishing active society for many years.

In 1876 the Society was reorganized at Albion on the 4th of December. The old book of minutes is a work of precision and clearness of penmanship:

On the above date a meeting was called to order by Dr. Stoddard, who read a copy of the circular calling the meeting. Dr. J. H. Montgomery of Marshall was elected temporary chairman, and Dr. L. A. Foot of Battle Creek was Secretary pro tem. Marshall was represented by Drs. J. H. Montgomery and Henry S. Joy. The Battle Creek doctors were: Edward Cox, S. S. French, M. A. Garcia, and L. A. Foote; Homer was represented by Dr. O. S. Phelps and Dr. E. A. Collins; Tekonsha by Dr. O. C. Lyon, and Albion by Dr. J. P. Stoddard.

A committee of three was appointed to work out a plan of permanent organization, who should report a Constitution and By-laws, and also recommend a place for the next meeting. Chairman ap-

laws. These were taken up article by article and discussed, some minor amendments accepted and finally approved and adopted as a whole by the meeting.

In accordance with the report of the nominating committee the following persons were elected by ballot as permanent officers of the association:

President—Dr. J. H. Montgomery, Marshall

First Vice President—Dr. Edward Cox, Battle Creek

Second Vice President—Dr. O. S. Phelps, Homer

Secretary—Dr. John P. Stoddard, Albion

Treasurer—Dr. M. A. Garcia, Battle Creek

The first subject announced by the President for discussion was that of Diphtheria for consideration at the next meeting. Dr. O. S. Phelps and Dr. O. C. Lyon were chosen to conduct the discussion, and Dr. M. A. Garcia was appointed as essayist.

The society has been a progressive one, taking a lead in medical affairs and thought.

In its first meeting the Society urged the passage of a law registering all physicians. The second meeting, among other things, had a paper on the application of plaster bandages.

At the meeting of December 4, 1877, there was a discussion and report of typhoid fever, at which it was found all the cases were within the distribution of a certain line of soft water. This was a paper by Dr. J. H. Kellogg inquiring why 44 cases should develop at the College. Dr. Cox suggested water supply as a cause.

In 1878 and for many years, there were both afternoon and evening sessions of the Society and, judging from the minutes, very interesting debates. In September, 1879, the meeting was a discussion as to whether dentists should be considered a separate profession or as specialists in the practice of medicine. In 1881 they proposed plans for placing the vital statistics of the State under the State Board of Health.

In 1882, March 7, there was a very interesting debate by Dr. Geo. H. Green and Dr. S. S. French on the question of "The Periodic Examination of all Practicing Physicians by a State Medical Examination Board." Drs. Kellogg, Cox, and Dr. H. O. Walker of Detroit, the essayist, participated, but the issue was evidently a draw. However, the trend of thought is shown thus early.

In September this same year appeared a lengthy discussion of "Occupations for Women" and the advantages of training them for nursing service.

The September, 1883, meeting was a discussion of the cause and treatment of typhoid fever. Dr. A. W. Alvord said, "At the present time little is known about the cause or prevention of typhoid fever, but I believe it to be a filth disease and a preventable disease." He cited a family he had attended where the well water was contaminated by surface drainage from an adjacent very filthy cow lot. Five of the six members of the family were ill.

The tenth annual meeting in 1885 brought out a long discussion as to whether the bacillus caused consumption or consumption caused the bacillus. Then is a famous old trial, for advertising, of Dr. J. H. Kellogg, extending through twenty pages of the minutes of 1886. The vote was a tie and hence the prosecution did not prevail.

May 26, 1896, the Society, being poorly attended on account of academies flourishing in each city of the county, voted to disband, but reconsidered, and, with Dr. W. H. Haughey as Secretary, began increasing its interest and attendance.

When the State Medical Society was reorganized in 1902, Calhoun was so well organized that it secured Charter No. 1. Since that time the Society has had monthly instead of quarterly meetings, and has grown in worth to the community and the State.

This society has given four presidents to the Michigan State Medical Society—Cox, French, Alvord and Stone. It has given other State officers, Section officers, etc., in proportion. It has had members of the State Board of Registration and the State Board of Health. It has given to the Military service many of its members, starting with Dr. A. L. Hays in the Black Hawk War. The Civil War claimed Dr. O. C. Comstock, Jr., Capt. of troop and killed in the Battle of the Wilderness; Dr. Samuel M. Holton and Dr. S. S. French of Battle Creek; Dr. Milton Chase, Battle Creek; Dr. Edwin Church, Marshall; Dr. Willoughby O'Donoghue, Albion; Dr. Henry Ostrand, Albion; Dr. L. B. Thayer, Battle Creek; Dr. Wm. Campbell, Battle Creek; Dr. Thomas Eggleston, Dr. C. J. Lane, Marshall, and Drs. A. W. Alvord and W. E. Dickey, who moved to Battle Creek later.

THE BATTLE CREEK ACADEMY OF MEDICINE AND DENTISTRY

Indigency is the lack of, or the inability to obtain, or pay for, the common necessities of life such as food, fuel, clothing or shelter, as well as medical care when needed.

It is difficult at times to get civil authorities to agree to the principle that payment to physicians for medical care to indigents is as much an obligation of the State as is food, fuel, clothing, or shelter. Boards of Supervisors, Poor Commissioners, and City Administrators have very little idea that medical service represents a tangible commodity. Political agencies as well as the general public have been slow to give to the medical and dental professions their rightful place in the set-up of the oncoming rush for welfare service.

This misunderstanding of the Board of Supervisors, and the City and County officials, led to the formation of a group from the Calhoun County Medical Society to study Medical Economics. The result is the Battle Creek Academy of Medicine and Dentistry, the two professions being so intimately interested in these problems.

Doctors and Dentists of Battle Creek are about the average mine run variety. When not pulling for themselves and their patients, they are generally pulling for each other. They attend staff meetings at the hospitals the second and third Tuesday eve-

nings of each month; attend the County Medical Society on the first Tuesday; but the fourth Tuesday evening is when they all turn out to the "Academy," and it is of the Academy of Medicine and Dentistry that I want to tell. This organization is a sort of an economic chapter of the County Medical Society, having certain ideals and objectives quite separate from the scientific side of Medicine. It is incorporated under the laws of the State of Michigan and this article aims to give you the facts and figures pertaining to what it accomplished in 1933. For a complete year it handled every indigent case in the City, and kept detailed records of office visits, house calls, night calls, hospital calls, operations, confinements, and all other types of service. The Academy employed its own social service worker to determine indigency, employed its own account to keep its records, and audited its own bills, payment of which was made from a monthly stipend from the City. Each item of service was billed to its auditors at the usual prevailing rate, and the auditors scaled down the bills and prorated the payment in accordance with the amount of money available from the City.

During the year of 1932 a committee from the Medical Society made a study of the costs of medical care in Battle Creek during the previous three years. This was accomplished with the coöperation of the City and County officers, and the figures made available were used as a basis of an estimate for the 1933 service.

Based on these findings the Academy of Medicine and Dentistry contracted with the City of Battle Creek to care for its indigent sick for a flat sum of \$12,000.00 for medical cases, and another contract for \$900.00 for dental cases. This service, however, did not include hospitalization expense, or venereal or contagious disease, orthopedic appliances, or such unusual drugs as insulin, salvarsan, vaccines, sera or medicines not usually carried by the general practitioner in the ordinary pursuit of his practice. These items were paid for by the City by order or prescription to the local drug stores.

The contract for dental cases included those measures necessary for the relief of pain and the eradication of contagion and such additional measures, other than permanent restorative dentistry, as might be deemed necessary in the successful treatment of disease or injuries.

It should be stated that these two contracts for medical and dental care were made on a basis of at least twenty per cent less than the known costs of indigent care in other years as revealed by our preliminary survey. This was due to an expected shortage or delinquency in tax collections.

In addition to agreeing to furnish medical and dental service upon a basis considerably less than the known costs in other years, when even less indigency prevailed, the Academy of Medicine and Dentistry agreed to employ, at its own expense, an experienced social worker, a former county nurse, who, together with the City Director of Relief, determined the social status and worthiness of each case. Heretofore, the City had borne the expense of the social worker.

Aside from the physicians of the Sanitarium whose work is limited to the institution, there are 52 physicians and 27 dentists, members of the Medical and Dental Society in active practice in the city. The two local approved hospitals are open to members of the Medical and Dental Societies. One hospital has two hundred beds, while the other, an older institution, has a few less than a hundred beds. In Battle Creek four large office buildings in the retail district afford office space for most of the doctors, but few having offices attached to their homes.

Each member of the Academy who has an office

or house call from a family or individual who appears to be unable to pay his service, who is already receiving fuel, food, or rent from the City, would render first aid at once, with no question as to forthcoming pay. On a special notification card the doctor reports the name, age, and kind of service rendered, to the social worker, who, together with the City Director of Relief, investigates the family, and, if found worthy, the service is continued until the patient recovers. If found unworthy of city relief, the doctor would proceed to treat the case as any other private patient. Cases requiring hospitalization are not sent to the hospital, except in emergency, until approved by the City Director of Relief. Emergency cases are sent to the hospital and investigated afterwards.

At the end of each month each doctor or dentist sent to the Academy headquarters an itemized statement of each case served. These bills were made out at the prevailing rates in this City for professional service. An auditing committee, composed of officers of the Academy, audited all bills rendered by the members, and satisfied themselves that the bills represented claims for actual services rendered.

All approved bills were ordered paid by the treasurer, but were prorated for payment after deducting the overhead expense of the Academy; viz., the social director, telephone, auditor, etc. Careful records of cases and systematic accounting of the funds were kept.

List of services rendered by the Academy of Medicine and Dentistry January 1 to December 31, 1933:

Office calls 5,696, House calls 4,042, Hospital calls 688, Night calls 210, Appendectomies 49, Confinements 93, Tonsillectomies 50, Herniotomies 9, Fractures 40, Incomplete Abortions 10, Minor surgical 114, Major surgical 63, Mastoidectomies 3, X-ray Examinations 102, Cystoscopies 2.

The above services were billed to the auditing committee at the regular rates charged in this city, viz., \$2.00 for office treatments, \$3.00 for house calls, \$5.00 for night calls, etc., etc.

The total bills for all services amounted to \$49,782.25. In order to keep within the contract the auditing committee had to trim the bills down to \$8,929.20. The overhead cost of investigator and bookkeeper amounted to \$3,070.80 or a total of \$12,000.00, the amount of the contract. At this rate each doctor averaged 17.9 cents on the dollar of bills rendered. The table below gives the figures for both the medical and dental service.

Medical

12 Mos. Doctors bills as rendered.....	\$49,782.25	
Cash available from City under contract.....	12,000.00	

Deficit, or amount of service rendered, but not paid.....	\$37,782.25	75.9%
Representing 75.9%		
Expenses for investigators, phone, etc.....	\$ 3,070.80	6.6%
Actually paid Doctors.....	8,929.20	17.9%
or 17.9 per cent of bills		

Total	\$12,000.00
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Dental

12 Mos. Dental Bills as rendered.....	\$ 1,856.75	
Cash available for City contract.....	900.00	
Deficit, or amount of services rendered but not paid.....	956.75	51 %
Expense for investigations, phone, etc.....	230.22	12.1 %
Payments made to dentists.....	669.78	36.3 %

Total	\$ 900.00
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Thus was the year 1933 cared for. In 1934 we had the new set-up of the Federal Government taking part in local relief under the Michigan Emergency Relief Administration. Our Battle Creek Academy of Medicine and Dentistry has entered into an agreement whereby we render aid as last year, send in the same reports and the bills are paid to the academy auditor, who distributes the money to our members, deducting 2 per cent for expense of the office, auditing, etc., and we audit all our bills through our own auditing committee. This has worked very satisfactorily with these accounts chargeable to the Emergency Relief Administration or the City, but the Afflicted Children's

accounts are a complete washout so far, no one being paid anything for medical or surgical emergency cases. The Probate Judge and the Poor Commissioner demand that the doctors sign a waiver of their fees before they will approve the hospital bills for payment by the State.

The Attorney General has been appealed to twice for at least a ruling on this waiver question but, so far, has failed to reply. We believe we are entitled to his interpretation of the Law.

The Academy hesitates to clamp down and refuse aid to children's emergencies but this will have to be the next step, we fear.

THE LEILA Y. POST MONTGOMERY HOSPITAL

The Leila Y. Post Montgomery Hospital was established in 1927 through a gift by Mrs. Leila Y. Post Montgomery to the Sisters of Mercy. The Hospital was erected by Mrs. Montgomery on a beautiful and spacious site, given to the sisters, and



LEILA Y. POST MONTGOMERY HOSPITAL

opened for patients on March 11, 1927. It had 96 beds and 20 bassinets, a school of nursing, and an out-patient department. Promptly the hospital was operating to capacity and gave evidence of the wisdom in planning for expansion. In 1929 Mrs. Montgomery, recognizing the need for more room and more departments, gave an addition increasing the capacity to 200 beds and 20 bassinets. There is complete equipment for x-ray (excepting deep therapy), hydro-, electro- and physio-therapy, a wonderfully beautiful and fully equipped children's department, a department closed off from the rest of the hospital for thyroid and kindred cases; a surgery completely equipped with five operating rooms; an emergency department including first aid rooms, beds, and operating room. The Chapel is a retreat most restful and inspiring.

Sister M. Bernadette is the Superintendent, and Dr. Russell Mustard is Chief of Staff. Dr. A. E. MacGregor was first Chief of Staff and served one year, Dr. R. C. Stone served one year, Dr. Wilfrid Haughey served for four years, and Dr. Mustard is now serving his second year.

The hospital is familiarly and lovingly called "Leila" hospital by everyone. It is as nearly fire-proof and sound-proof as money can make it, and is administered by a board of three: Sister Bernadette, Father Maurice Walsh, the Pastor of St. Philips parish, Battle Creek, and Dr. Wilfrid Haughey.

On the same grounds and corresponding in architecture is a beautiful Nurses Home, provided for in

the will of the late Louis F. Worstein. This building contains rooms, class rooms, social hall and assembly hall. There is a training school of about forty student nurses.

The Staff meets the second Tuesday of each month and usually has a speaker from outside of the city in addition to its own program. Clinical and pathological conferences are also held at the call of the pathologist. There is a beautifully furnished and spacious parlor for the doctors on the main floor, where a library is maintained, and conferences may be held.

The staff is divided into departments of specialization headed by Dr. Russell, Mustard, Chief of Staff; Ben G. Holtom, Vice Chief; Robt. H. Fraser, Secretary; Surgery, A. E. MacGregor; Orthopedics, C. W. Brainard; Obstetrics, H. F. Becker; Medicine, C. R. Hills; Ophthalmology, R. D. Sleight; Oto-Laryngology, Wilfrid Haughey; Pediatrics, S. L. Lowe; X-ray, W. O. Upson; Dentistry, John H. Rockwell; Laboratory, A. A. Humphries.

NICHOLS MEMORIAL HOSPITAL

Nichols Memorial Hospital was established in 1889 and has been in continual operation ever since. It was started by an early-day organization called "The Charitable Union of Battle Creek" and was made possible by the beneficence of Hon. John C. Nichols, President of the Nichols & Shepard Threshing Machine Co. of this city—hence the name, "Nichols Memorial Hospital."

The hospital is still owned and operated by The Charitable Union, which is made up of two representatives from each church, lodge and society of the city and vicinity desiring representation,—about forty-eight members at this time. From this number a Board of Trustees for the hospital is chosen, consisting of eleven members who in turn elect their own officers annually. The present President is Mrs. W. N. Dibble; Secretary, Mrs. L. H. Sabin; Treasurer, Mrs. H. W. Cavanagh—all of this city.

The Board of Trustees selects a Superintendent for the hospital and she conducts all business of and for the hospital, but may present, at the regular monthly meetings of the Board, any matters she feels should have their special attention.

The hospital maintains a fully organized Staff of physicians, with regular meetings held once a month. Applicants for membership on the Staff must be regular licensed practitioners of medicine, surgery or dentistry, and who are members in good standing in the Calhoun County Medical Society, or the Society of an adjoining county, or of the American Dental Association. They must be approved by the Board of Trustees as well as by the Staff.

From among the members of the General Staff the Board of Trustees elects the eleven members of the Executive Staff and their term of service is three years. They elect their own officers annually. It is under direction of the Chief of Staff, Dr. Joseph E. Rosenfeld, holding that position.

The Associate Staff is made up of the new members who are expected to serve in this division for two months, regardless of their qualifications, under the supervision of the head of the specialization department he has chosen. The entire Staff is subdivided into specialization departments each headed by its chairman: viz., Surgical, Dr. A. E. MacGregor, chairman; Medical, Dr. A. M. Giddings, chairman; Eye, Ear, Nose and Throat, Dr. R. D. Sleight, chairman; Obstetrics, Dr. H. M. Lowe, chairman; Pediatrics, Dr. F. J. Melges, chairman; Radiology, Dr. C. S. Gorsline, chairman; Emergency, Dr. N. H. Amos, chairman.

There is a School of Nursing in connection with

the hospital averaging forty students. This school was organized by the doctors themselves about two years after the hospital was opened. They formed a corporation with shares at \$5.00 to maintain the school, but soon got into such financial difficulties that it was decided to turn the project over to the ladies of the Charitable Union to conduct and maintain and it still remains under their supervision. Dr. W. H. Haughey is the only surviving member of the committee who organized this school, and he is still in active practice and much esteemed as a loyal friend of the hospital and school. For the past three years the school has affiliated with the Battle Creek College whereby the students, at completion of their three year nursing course, have a one year college credit in addition to their diploma in nursing. This makes entrance requirements high, but has been found to be very satisfactory to both the school and the individual student.

As the years have gone by, new equipment has been purchased as it has come out and was seen to be necessary in the care of the sick or useful

advantage of any service we may be able to give you. Between the hours of 8 and 10 a. m. you will be welcome to observe any operations that may be scheduled. We feel it is an honor to have your organization with us and believe it will be our own fault if we do not obtain much good and help from such a gathering.

AMERICAN LEGION HOSPITAL

The American Legion Hospital is a 350 bed sanatorium on U. S. Highway No. 12, three miles west of Battle Creek. It was founded in November, 1921, by the American Legion, Department of Michigan, for the care and treatment of Michigan's tuberculous war veterans. It was dedicated by Marshall Foch. It is operated by the American Legion on a self maintenance basis without grants, state aid or funds other than the money collected for the actual care of patients.

After seven years the number of veterans need-



AMERICAN LEGION HOSPITAL—ADMINISTRATION BUILDING

for their comfort, and building maintenance kept up. But an old-type building presents certain problems that are somewhat difficult to solve in trying to maintain the highest type of procedure and service. Hence, in 1929 an organization of Battle Creek citizens was formed called the "Battle Creek General Hospital Association" who took upon themselves the responsibility of starting the move for a new hospital building.

Through public subscriptions and with the help of certain assets the shell of a fine new building was erected. It stands at the edge of Irving Park, with entrances from two streets—West and Tompkins. Completion of this project was delayed through the last few depression years but when it is finished the convenient and modern type of building together with the roomy grounds and the attractive outlook toward the park will make it a hospital of which Battle Creek may well be proud. When the new building is ready for occupancy, all properties and holdings of Nichols Memorial Hospital together with the organization as a hospital will be taken over by the new Association and continued at the new location.

We wish to extend a hearty welcome to the members of the Michigan State Medical Association as it meets in Battle Creek in the near future. We cordially invite you to visit our hospital and to take

ing hospitalization for tuberculosis was reduced to the extent that the facilities of the hospital were made available to the various counties for the care of their indigent cases of tuberculosis. Since 1928, there has been a gradual increase in the number of county cases hospitalized.

Patients are sent to the American Legion Hospital through the Veterans Administration and from counties all over the state where there are no facilities for the care of cases of tuberculosis, and from counties whose sanatoria are full. Patients can also be accepted as private pay cases. Since June, 1924, female patients have been admitted. All types and stages of tuberculosis are accepted for treatment, but there are no facilities for the care of children.

The hospital is of the cottage-infirmery plan. There are two infirmery pavilions, one of 60 single rooms for female and one of 60 rooms for male patients; one receiving ward of 16 beds for men and eight avenues of four-bed cottages. One avenue and part of one infirmery are used for colored patients. It is situated on a small elevation giving a view of the Kalamazoo valley, and presents ideal surroundings for the treatment of tuberculosis.

In the medical wing are located the operating room, conference room, x-ray department, clinical laboratory, library, nose and throat room, light therapy room and physician offices. The laboratory

is equipped for all forms of clinical laboratory, blood chemistry, bacteriological and serological work. The x-ray department includes photographic work. The dental work is done in the hospital by a part time dentist.

The diet kitchen provides special diets for diabetic, nephritic cases, and tuberculous enteritis, laryngitis, etc., under the supervision of a competent dietitian.

An occupational therapy school is operated in the hospital employing three teachers. Through this

group. For this reason many of the cases have been given bilateral collapse therapy, some bilateral phrenic operations, some bilateral pneumothorax, some pneumothorax on one side and phrenic surgery on the other, a few had pneumothorax on one side and thoracoplasty on the other, and one had, in the course of his hospitalization, bilateral phrenic surgery, bilateral pneumothorax, and a unilateral thoracoplasty, upper stage. The results obtained from this program of extensive collapse therapy are sufficiently good to warrant further application



CALHOUN COUNTY PUBLIC HOSPITAL

work patients are taught to do leather work, wood work, weaving, rugmaking and fancy work, such as tatting, embroidery work, bead work, etc. In doing this work they spend much time pleasantly which would otherwise be long hours spent in idleness.

The medical staff includes a Director, Dr. W. L. Howard, and three resident physicians, also a laboratory and x-ray director and assistant. The visiting staff includes prominent Battle Creek and Detroit physicians in the fields of surgery, internal medicine, eye, ear, nose and throat, orthopedics, psycho-neurology and pathology. Staff Conferences are held weekly when cases are presented for diagnosis, discussion of treatment and discharge from treatment. All cases in the hospital are considered in this conference every two to three months.

In 1930, the modern method of treating pulmonary tuberculosis—collapse therapy—was introduced into the hospital routine. A few pneumothorax cases and five phrenic operations constituted the collapse therapy in that year. A new modern surgical unit was built and completely equipped for this form, as well as other forms, of surgery. All thoracoplasties and other operations are done at the hospital.

Since 1930, collapse therapy has had wider application, and in 1933 over 80 per cent of the patients admitted to the hospital were treated with collapse measures. Phrenic surgery was used alone in 19 per cent cases, pneumothorax alone in 21 per cent cases. Phrenic surgery and pneumothorax combined in 27 per cent cases, and thoracoplasty in 13 per cent cases. Three cases of other forms of collapse therapy are recorded. Of the patients admitted over 68 per cent had far advanced pulmonary tuberculosis, 23 per cent had moderately advanced lesions and only 9 per cent were in the minimal

of the various forms in the field of bilateral therapy. In the past seven years the deaths from tuberculosis have been cut in half and the number of arrested cases more than doubled.

The American Legion Hospital, because of the active work in the field of tuberculosis, ranks with the five leading institutions in Michigan in the treatment of tuberculosis, and is in a measure responsible for Michigan having the honor of leading the world in the treatment of tuberculosis. It serves a great part of the state in the place of a State Tuberculosis Sanatorium and has yet more beds available to extend this service. Of 350 available beds only 170 of them are occupied at the present time.

The hospital is more than an institution for the treatment of tuberculosis. It is an educational center in the field of public health, chiefly as it is related to precaution, early diagnosis and treatment of tuberculosis. The patients in the hospital are taught to guard against the spread of the disease and also much about the symptoms and treatment. Friends and relatives are instructed in many phases of the field of tuberculosis, and through the channels of Woman's Auxiliaries, Rotary Clubs, Women's Clubs, Parent-Teachers Associations and Legion meetings the information about tuberculosis, its dangers, causes, symptoms, diagnosis and treatment is constantly carried to a large part of the general public of the state.

The American Legion Hospital, with part of its facilities given to the care of county cases of tuberculosis and its program of tuberculosis education being extended, constitutes another phase of the great community service program of the American Legion, Department of Michigan.

CALHOUN COUNTY PUBLIC HOSPITAL

An attractive area of rolling country two miles east of Battle Creek provides the setting for the Calhoun County Public Hospital. The building is located a quarter of a mile from highway U. S. 12 and can be reached in a few minutes' drive from the city.

The capacity of the Hospital is 75 beds and since the opening of the institution on February 12, 1924,

The largest proportion of the patients are of the neuropsychiatric type although the hospital is equipped to handle general conditions also.

The Medical Staff consists of a resident staff of nine physicians and four consultants, all graduates of reputable medical schools and qualified under the United States Civil Service Rules and Regulations. Inasmuch as the physicians come from different states and are subject to frequent transfers, it is not possible for them to be active members of the



ADMINISTRATION BUILDING, U. S. VETERANS HOSPITAL, CAMP CUSTER

a total of 919 patients have been hospitalized. A considerable number of these have been able to return to their homes to resume their normal place in society and industry. A daily average of 70 patients has been maintained during the past six months.

All types and stages of tuberculosis are accepted including pulmonary, glandular, bone and joint tuberculous conditions.

Complete Laboratory, X-Ray and Heliotherapy departments are maintained, where modern technic and equipment assure the patient of correct and up to date facilities for their diagnosis and care. Approximately 40 per cent of the patients hospitalized are receiving collapse therapy.

Weekly chest clinics are conducted by a well established Out-Patient department. Every Tuesday morning many patients arrive from miles around for chest examinations, which are free, while a nominal charge is made for x-ray examination when this is indicated. The number of chest examinations made in the clinic reaches approximately 200 cases per month. Follow-up work is carried on by the Social Service Department by keeping in close touch with patients who are being cared for in their homes and by making the proper arrangements for those needing hospitalization. Close contact is maintained with discharged patients, who are expected to report periodically for a check-up.

VETERANS' ADMINISTRATION FACILITY CAMP CUSTER, MICHIGAN

The Veterans' Administration Facility located on a part of the Army Reservation at Camp Custer, Michigan, was formally opened for the reception of patients October 15, 1924. Since that date 2,319 patients have been admitted for treatment. From an original bed capacity of 532, remodelling of old buildings and the addition of new ones has increased the number of beds to 835.

local county societies. Both the Calhoun and Kalamazoo County Societies extend the hospital medical staff the courtesy of attending their meetings and the hospital is on the mailing list of the two county societies.

The administration of the hospital is the responsibility of the manager, a physician. A business manager supervises the business activities, while a clinical director looks after the medical work of the Station. For treatment of patients reliance is placed mainly upon physiotherapy and occupational therapy. The use of drugs is incidental to whatever physical complications occur. Surgical conditions are such as one might expect in a community of comparable size. The greatest problem in treatment is largely one of re-education. Specially trained occupational therapy aides endeavor to stimulate the attention of patients, either in craft work or in various outside activities, looking forward to a future industrial adjustment again in civilian life. This adjustment outside the hospital is assisted by the hospital social service, the Red Cross and service organizations in home communities.

At present, applications for hospitalization at the Veterans' Facility, Camp Custer, are made on Form P-10. These should be mailed to the hospital, where the eligibility of the applicant is determined. When space is available the applicant is so notified. Commitment is necessary when a patient is brought to the hospital contrary to his wishes. Those patients who draw compensation or have accumulated estates must supply their own clothing and incidentals.

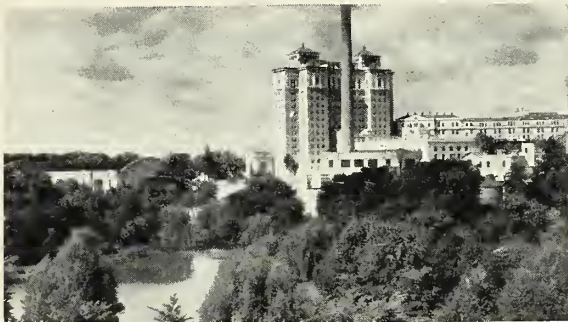
While most of the patients are from the State of Michigan, applicants are also received from Ohio, Indiana, Illinois, and Wisconsin. At the present time the hospital has a waiting list, so no patient should be sent to the hospital until it has been determined that he can be admitted.

Visiting days at the hospital are daily from 8 a. m. to 4 p. m.

THE BATTLE CREEK SANITARIUM

Starting as a Water Cure in a small farmhouse in 1866, the institution was incorporated the following year as the Western Health Reform Institute as a stock company. At the end of the first year the stockholders voted to make the Institute a philanthropic and eleemosinary enterprise by devoting the earnings to betterments and charity.

After a few years of prosperity the patronage became so small and the small capital so much im-



VIEW ACROSS IRVING PARK. SANITARIUM IN DISTANCE.

paired, it was evident that the project had failed and must be wound up. Dr. John Harvey Kellogg, then a recent graduate from Bellevue Hospital College, was induced to undertake to reorganize the enterprise. He took charge October 1, 1876, and undertook to create a new type of medical institution. The first step was a change of name to Battle Creek Sanitarium. Scientific methods were introduced in place of the crude routine practices of the primitive Water Cures which under lay management had fallen into disrepute. The unattractive and unbalanced diet was improved, electricity, mechanotherapy, massage, and Swedish movements and the various resources of rational and scientific medicine were added to the therapeutic program, laboratories for the application of every test useful in diagnosis were fitted up and patronage soon began to improve. Starting in October, 1876, with 12 patients, the number soon increased and by the following spring the number of patients was nearly 100. With \$10,000, the first winter's earnings, the erection of a four story main building to accommodate 100 patients was begun and finished at a cost of \$125,000, of which \$115,000 was borrowed.

Within a few years, additions were made increasing the bed capacity to 400. A hospital building was next erected and a nurses' dormitory and adjacent cottages were purchased until the buildings numbered sixty.

In 1898, the thirty year charter having expired, a new charter was obtained in which the larger aims of the new organization were stated as follows:

"a. The maintaining of a hospital and charitable asylum within the State of Michigan for the care and relief of indigent or other sick or infirm persons.

"b. The performing of such work and acts as it is allowed by the State to perform, with its property and funds, and required for its main and direct purpose as aforesaid, of an undenominational, unsectarian, humanitarian, and philanthropic nature, and also such work and acts so permitted as aforesaid, as are in the line of sanitary, dietetic, dress, and other hygienic and temperance reforms."

In February, 1902, the Main Building and Hospital were destroyed by fire. The entire equity of the enterprise was wiped out, the debts exceeding the assets by \$18,000. With only ashes to offer for security, it was necessary to raise \$1,000,000 to erect a new, fireproof main building. Thanks to the confidence of the friends of the institution, mostly former patients, loans for the amount needed were obtained, coming in from hundreds of sources just fast enough to meet an outlay of \$20,000 each week until the end of a year the building was finished.

The new building with cottages provided rooms for 500. In a few years, the accommodations were again found to be insufficient, and a large building erected as an opposition and occupied for a time by McFadden, was purchased at a nominal price, raising the capacity to 800 beds for patients. At this time, the whole Sanitarium family, including nurses, attendants, technicians, and physicians, numbered in the busy summer months more than 3,000, and a patients' waiting list of a hundred was not unusual. In due time, the debt was paid and six years ago the growing patronage required the erection of a large addition to the main building, which increased the capacity by more than 500 beds. During the height of the season of 1929, every room was occupied.

It has been the constant aim of the management to make the work of the Sanitarium supplementary to that of the family physician and to cooperate freely with the profession in its humanitarian work.

Having no endowment, it was necessary that the work should be made self-supporting. This required a departure from the usual plan of hospital management. Physicians are engaged as full time employees, and are not allowed to conduct private practice or to receive fees. All fees or other remuneration for medical or other services, including fees for examinations, operations and treatment by specialists, which are the usual perquisites of the attending physician or surgeon, have gone into the treasury of the institution. By this means the institution has been not only fully self-supporting, imposing no burden of expense upon either the State or the community, but has been a source of financial betterment as well as medical relief. Without the fees, the institution not only would have made no financial growth, but would not have been self-supporting. It should be added that during the greater part of its history, the compensation of physicians and managers has been so small as to make their services almost a contribution. This generous and self-sacrificing attitude on the part of its faculty has alone made possible the existence and financial growth of the institution.

It has been a constant aim of the Sanitarium management to make contributions to medical progress both through its unusual clinical opportunities and through researches undertaken in laboratories provided for the purpose.

As perhaps the most important of the therapeutic innovations developed here, may be mentioned the medical uses of the electric light, especially the light cabinet, and the various forms of photophores now usually termed infra-red appliances. The sun bath had been in use since 1876, but on account of its uncertainty, and usual absence in winter, the arc light was substituted and shown to be an excellent substitute for sunlight. This was done several years before (1891-94) Finsen began his work at Copenhagen. The cabinet and other appliances, first used in 1890, were exhibited at the Chicago Exhibition of 1893, and there attracted the attention of a German doctor who secured their manufacture in Germany, where, in a few years, the cabinet became very popular. It was later imported into this country as a novelty by the Kny-Scheerer Company of

New York, and has since come into general use, replacing the Turkish and hot air baths.

The Sanitarium was one of the first institutions in this country to establish a bacteriological laboratory. After a visit to the Pasteur Institute, in 1889, the late Dr. Paul Paquin, a graduate of the Institute, was employed to organize and conduct the laboratory and to edit, with the collaboration of Metchnikoff and other European authorities, with Senn, Belfield, Burrill and others in this country, the *Bacteriological World*, the first, and for some years the only, publication of the sort in this country.

The Sanitarium was the first institution in this country to introduce the systematic use of the test meals of Hayem and Winter and Ewald. More than 40,000 such examinations have been made.

More than fifty years ago, food researches were begun with a view to the determination and development of their therapeutic values, and especially with the idea of encouraging the consumption of plant foods. This work was encouraged by the U. S. Department of Agriculture through a request some 40 years ago from Professor Dabney, then the Assistant Secretary of Agriculture, for the preparation of a substitute for meat from plant proteins so as to be prepared for the time when flesh meats would become scarce and high in price because of the settling up of the Western grazing lands by farmers.

More than a hundred different foods have been developed in our laboratories, some of which have become very popular, especially flaked cereals, and have made Battle Creek widely known for its food industries.

From the food laboratories were later developed a nutrition laboratory which, under the direction of Dr. Helen Mitchell, has made interesting and valuable contributions to "The Newer Knowledge of Nutrition."

A visit to the Pavlov Laboratory in St. Petersburg, in 1907, led to the establishment after the World War of a Pavlov Laboratory under the direction of the eminent Professor Boldyreff, for many years first assistant to Professor Pavlov, and executive head of his laboratory. The contributions of this laboratory are embodied in a series of remarkable papers by Professor Boldyreff and his son Ephraim.

In harmony with its declared purpose, the institution has been active in an educational way. In 1880, it began courses of instruction in nursing, the fourth training school for nurses in the United States. It differed from all others in the fact that it was based upon physiotherapy instead of medicinal agents. Each nurse received thorough training in the technic of hydrotherapy, massage, the Ling system of corrective gymnastics, the use of electricity, and dietetics. Nurses were also taught more than a dozen ways of relieving pain and getting patients to sleep without drugs and to correct constipation by other means than medicinal laxatives, and also the hydropathic treatment of fevers. The graduates were soon in great demand and in a few years the school became one of the largest in the country. By request nurses and physicians were sent to instruct nurses and physicians in State institutions in Illinois, Indiana, Ohio, Michigan, and other states, and the neutral bath and other hydropathic measures soon came into general use in state institutions for the insane. The superintendent of the Kalamazoo State Hospital reported that after his nurses were instructed in the use of hydropathic hypnotic methods, although the number of patients had doubled, they used less sleep-producing drugs in a whole year than they formerly used every week.

More than 2,000 nurses have been graduated from the Sanitarium Training School, and the system of sanitarium nursing developed here, in teaching which

the late Dr. Kate Lindsay rendered invaluable aid, is now being taught in scores of training schools in this country and Europe.

In the year 1906, a School of Home Economics was organized to meet the demand for trained dietitians and to utilize the extraordinary opportunity for practical training of dietitians afforded by the Sanitarium. More than 900 dietitians have been graduated from this school.

In the year 1909, a School of Physical Culture was organized from which 775 graduates have been sent out. In connection with the physical education department of the Sanitarium, a strength testing apparatus was developed more than 40 years ago, by means of which the strength of 42 groups of muscles, all the principal muscles of the body, may be accurately determined and graphically represented so as to show at once the percentage variation from the normal average for a person of the same height. With this apparatus, more than 30,000 persons have been tested and shown their defects. This apparatus is in use in all the United States military training schools. Five are in use in Annapolis, where the system of training developed here by its aid has been in constant use for more than 20 years.

Ten years ago, the three schools were segregated from the Sanitarium and organized under a separate charter, with the addition of a fourth year and a liberal arts department, as Battle Creek College. The College was soon recognized and admitted to membership by the North Central College Association. The improvement and preservation of health through meticulous biologic living is a fundamental purpose of the college and is made a part of its discipline.

The Sanitarium is by many supposed to be connected with a small sect or religious body. This is not the case. The original water cure, while a private corporation, was closely associated with the church in which the founders were members; but soon after its reorganization under its new charter as a non-sectarian institution, its church associations were definitely and completely severed. It is wholly independent and in no way in the slightest degree connected with or controlled or influenced by any cult, creed, or religious organization. Those customs peculiar to the place which give a contrary impression are merely hang-overs from former years and have no religious significance.

The following brief summary will give something of an idea of the volume of the work of the institution:

Number of patients treated to January 1, 1934 259,181.

Number of operations performed, 57,390.

Number of physicians treated, 4,661.

Number of patients referred by physicians, 7,795.

WRITE FOR YOUR
HOTEL RESERVATIONS
AND PLAN TO PROFIT BY
ATTENDANCE

OFFICIAL PROGRAM

114th Annual Meeting Michigan State Medical Society

September 11, 12 and 13, 1934

W. K. Kellogg Auditorium, Battle Creek, Michigan

OFFICIAL CALL

The Michigan State Medical Society will convene in annual session in Battle Creek on September 11-12-13, 1934. The provisions of the Constitution and By-laws and the official program will govern the deliberations.

GEORGE L. LEFEVRE, *President*
B. R. CORBUS, *Chairman Council*
H. A. LUCE, *Speaker*

Attest:

F. C. WARNSHUIS, *Secretary*

MEETING PLACE

All sessions will be held in the W. K. Kellogg Auditorium.

General Meeting

Wednesday Morning, September 12, 11:00 A. M.

MAIN AUDITORIUM

Presiding: GEORGE L. LEFEVRE, President—Muskegon

1. Invocation.
2. Welcome, Address—A. E. McGregor M.D., President Calhoun County Medical Society.
3. General Announcements—F. C. Warnshuis, Secretary.
4. President's Annual Address—George L. LeFevre, Muskegon.
5. Address—(Invited Guest).
6. Address—W. L. Bieerring, M.D., President American Medical Association, Des Moines, Ia.
7. Induction into Office of President-elect Richard R. Smith, Grand Rapids.
8. Adjournment.

Note: The public is invited to attend this general meeting.

HOUSE OF DELEGATES

Speaker: H. A. Luce, Detroit.

Vice Speaker: Frank E. Reeder, Flint.

Secretary: F. C. Warnshuis, Grand Rapids.

First Session

Tuesday, September 11, 1934, 9:30 A. M.

W. K. Kellogg Auditorium

1. Call to Order.
2. Report of Credentials Committee.
3. Roll Call of Delegates.
4. Speaker's Address.
5. President's Address.
6. President-Elect's Address.
7. Annual Report of the Council.
8. Appointment of Reference Committees.
 - (a) Council's Reports.
 - (b) Society Business.
 - (c) Miscellaneous Business.
 - (d) Reports of Committees.

9. Election of Nominating Committee to Nominate:

- (a) Three Delegates to A. M. A. Terms expiring—J. D. Brook, C. S. Gorsline and H. A. Luce.
- (b) Three Alternate Delegates. Terms expiring—T. E. DeGurse, R. H. Denham and W. C. Ellett.
- (c) Place 1935 Annual Meeting.

10. Committee Reports:

- (1) Legislation.
- (2) Woman's Auxiliary.
- (3) Radio Committee.
- (4) Preventive Medicine.
- (5) Delegates to A. M. A.
- (6) Maternal Welfare.
- (7) Therapeutics.
- (8) Cancer Committee.

11. Report of Committee on Economics.

12. Resolutions. (All resolutions are to be presented in triplicate.)

13. New Business.

14. Unfinished Business.

(a) Amendments to Constitution.

15. Recess.

Second Session

Tuesday, September 11, 1934, 2:30 P. M.

1. Call to Order.
2. Roll Call.
3. Report of Reference Committees.
4. Unfinished Business.
5. Resolutions and New Business.
6. Recess.

Third Session

Tuesday, September 11, 1934, 7:30 P. M.

1. Report of Credentials Committee.
2. Roll Call.
3. Reports of Reference Committees.
4. Elections:
 - (1) President-Elect.
 - (2) Report of Nominating Committee.
 - (3) Election of Delegates and Alternates to A. M. A.
 - (4) Councilors:
 - 13th District—B. H. Van Leuven—Retiring.
 - 14th District—H. H. Cummings—Retiring.
 - (5) Place for 1935 Annual Meeting.
 - (6) Speaker.
 - (7) Vice Speaker.
5. Unfinished Business.
6. Adjournment.

THE COUNCIL

The Council will meet at 8:00 P. M., Monday evening, September 10. Subsequent meetings will be determined by the Council.

SCIENTIFIC SESSIONS

The several Scientific Sections will convene on Wednesday morning from 9:00 to 11:00 A. M. and on Thursday morning from 9:00 to 12:00 A. M.

All the Sections will combine into a general meeting at 1:15 P. M. on Wednesday and Thursday afternoons. Detailed program will appear in the September JOURNAL.

REGISTRATION

Registration and Information Booths will be located in the Gymnasium in the Auditorium.

COMMERCIAL AND SCIENTIFIC EXHIBITS

These will be located in the spacious gymnasium in the Auditorium.

HOTELS

Kellogg Hotel—Headquarters for officers and delegates and invited guests.

Post Tavern—

1. General Headquarters.
2. Ladies' Auxiliary Headquarters. Slogan "Meet Me on the Bridge."
3. Entertainment Tuesday, September 11, 9:30 P. M.
4. Big Night, Wednesday, September 12. Informal. No big banquet or speaker.

Hotel Rates

Kellogg, 120 rooms. Single, \$2.50 to \$3.50; double, \$4.00 and up.

Post Tavern, 240 rooms. Single, \$2.50 and up; double, \$4.00 and up.

Clifton, 74 rooms. Single, \$1.00 and \$1.50; double, \$1.50 and \$2.50.

La Salle, 35 rooms. Single, \$1.50 and \$2.00; double, \$2.00 and \$3.00.

La Verne, 30 rooms. Single, \$1.50 and \$2.00; double, \$2.00 and \$3.00.

Please write direct to hotel for reservations.

There will also be private homes available, write to Chairman, Dr. R. C. Winslow.

LOCAL COMMITTEES

General Chairman—Wilfrid Haughey.

Meeting Places—C. S. Gorsline, Chairman, H. M. Lowe, L. P. Shipp, Gertrude Johnson, and C. C. Landon.

Hotels—R. C. Winslow, Chairman, J. E. Cooper, F. LaFrance, W. M. Putman, E. Van Camp, and Bertha Mosher.

Entertainment—C. W. Brainard, Chairman, C. R. Hills, B. G. Holtom, F. R. Walters, M. A. Mortenson, and Estella Norman.

Automobiles and Parking—A. M. Giddings, Chairman, W. R. Chenoweth, J. W. Gething, Karl Zinn, and S. E. Barnhart.

Section Monitors—N. H. Amos, Chairman, Phillip Bonifer, R. H. Fraser, T. K. Kolvoord, Stanley Lowe, and L. E. Varity.

Guests and Speakers—H. F. Becker, Chairman, H. Hanson, R. Stiefel, W. O. Upson, and W. M. Dodge.

Registration—Russell Musard, Chairman, Carl G. Wencke, W. M. Dugan, A. W. Nelson, and F. G. Melges.

Finance—A. E. MacGregor, Chairman, S. Pritchard, G. M. Byington, J. E. Rosenfeld, E. L. Eggleston, and C. E. Stewart.

Public Health Exhibit—A. A. Hoyt, Chairman, R. H. Baribeau, W. F. Martin, M. J. Capron, C. G. Fahndrich, W. L. Howard, and Arthur Humphries.

Reception—R. D. Sleight, Chairman, H. R. Allen, A. H. Bennett, J. A. Elliott, W. L. Godfrey, E. E. Hancock, E. L. Hanson, W. H. Haughey, J. J. Holes, Carrie S. Kellogg, Kenneth Lowe, C. G. Morris, Adonis Patterson, W. A. Royer, R. H. Steinbach, N. O. Byland, J. K. M. Gordon, C. W. Heald, John Heald, L. Jespersen, W. B. Lewis, A. B. Olson, W. H. Riley, Paul Roth, W. E. Vandervoort, Bruce Whyte, J. H. Kellogg, Nelson Abbott, G. W. Behan, Herman Beuker, E. M. Chauncey, S. K. Church, Robert K. Curry, E. Clare Derickson, G. B. Gesner, George C. Hafford, A. T. Hafford, C. E. Hale, Louis M. Henderson, Phillip M. Henderson, H. A. Herzer, O. Johnson, K. B. Keeler, L. N. McNair, J. Roberts, and A. D. Sharp.

General Medicine

Chairman: C. C. STURGIS, Ann Arbor.

Secretary: A. MERRILL WELLS, JR., Grand Rapids.

Wednesday Morning, September 12, 1934

1. Chairman's Address—"An Appraisal of the Therapeutic Methods Used in the Treatment of Lobar Pneumonia"—C. C. Sturgis, Ann Arbor.
2. "The General Practitioner as His Own Neurologist"—Hugo Freund, Detroit.
3. "Edema and Ascites"—William A. Thomas, Chicago.

Discussion—

1. M. A. Mortensen, Battle Creek.
2. R. L. Novy, Detroit.
3. Richard M. McKean, Detroit.
4. Address of the President of the Michigan State Medical Society before all Sections at 11 A. M.

COMBINED SECTIONS MEETING

First Session

Wednesday Afternoon, September 12, 1934

1. Subject in Dermatology—(Title and Speaker to be furnished by the Section on Dermatology).
2. "Individualizing Anesthesia"—Reuben Maurits, Grand Rapids.
3. "Acute Hepatic Insufficiency with Special Reference to Liver Function Tests and Therapy"—William A. Thomas, Chicago.
4. "Uterine Fibroids: Their Treatment and Some Correlated Factors"—Joseph L. Baer, Chicago.
5. Clinico-pathological Conference—led by Dr. Hartman of Detroit.

SCIENTIFIC PROGRAM

Thursday Morning, September 13, 1934

1. "Agranulocytic Angina"—W. H. Gordon, Detroit.

Discussion—

1. C. C. Sturgis, Ann Arbor.
2. Milton Shaw, Lansing.
2. "Peptic Ulcer: A Consideration of the Factors

of Chronicity and a Critique of Methods of Treatment"—Charles L. Brown, Ann Arbor.

Discussion—

1. E. L. Eggleston, Battle Creek.
2. B. R. Corbus, Grand Rapids.
3. "Surgery in the Management of Heart Disease"—E. C. Cutler, Professor of Surgery, Harvard Medical School, Boston, Mass.
4. "The Detection of Early Tuberculosis"—H. S. Willis, Northville, Michigan.

Discussion—

1. John Barnwell, University Hospital, Ann Arbor.
2. Salvatore Lojano, Morgan Heights Sanatorium, Marquette.

Second Session

Thursday Afternoon, September 13, 1934

1. Nose and Throat Subject—(Title and Speaker to be furnished by Section on Rhinology and Otology).
2. "Pre-operative and Post-operative Treatment of Toxic Thyroid Patient"—E. C. Cutler, Boston, Mass.
3. "Hematuria"—William J. Butler, Grand Rapids.
4. Subject in Pediatrics—(Subject and Speaker to be furnished by the Section on Pediatrics).
5. Surgical Subject—(Title and Speaker to be furnished by the Section on Surgery).

Surgery

Chairman: EARL I. CARR, Lansing.

Secretary: H. K. SHAWAN, Detroit.

First Session—Wednesday, Sept. 12, 1934 9:00 A. M.

1. Chairman's Address—Earl I. Carr, Lansing.
 2. "Clinical Abdominal Diagnosis"—Theron G. Yeomans, St. Joseph.
 3. "Treatment of Facial Wounds Due to Automobile Accidents"—L. Claire Straith, Detroit.
- Discussion—
Ferris Smith, Grand Rapids.
4. "Fracture of the Lower Extremity"—Peter A. Bendixen, Davenport, Iowa.
- Discussion—
1. George J. Curry, Flint.
2. Clifford B. Brainard, Battle Creek.
- 5. "Clinical Pathological Conference"—10:45 A. M.—W. L. Hartman, Detroit.

Second Session—Thursday, Sept. 13, 1934 9:00 A. M.

1. "Lesions of the Esophagus"—Roy D. McClure, Detroit.
- Discussion—
1. William A. Hudson, Detroit.
2. John Alexander, Ann Arbor.
- 2. "An Evaluation of Palliative Operations"—Frederick A. Collier, Ann Arbor.

Discussion—
1. Julius H. Powers, Saginaw.
2. Alexander J. MacKenzie, Port Huron.
- 3. "Peri-anal Suppuration as a Focus of Infection"—Louis J. Hirschman, Detroit.

Discussion—
1. Karl B. Brucker, Lansing.
2. G. M. Brown, Bay City.

4. "The Treatment of Cerebro-cranial Injuries"—Loyal Davis, Chicago.

Discussion—

1. Max M. Peet, Ann Arbor.
2. John J. Walch, Escanaba.
3. E. S. Gurdjian, Detroit.

Gynecology and Obstetrics

Chairman: HAROLD FURLONG, Pontiac.

Secretary: HAROLD MACK, Detroit.

First Session—Wednesday, Sept. 12, 1934 9:00 A. M.

1. Report of Committees on—
(a) Clinical Problems—Dr. Miller.
(b) Birth Certificates—Dr. Alles.
(c) Birth Control—Dr. Mack.
2. Chairman's Address.
3. "The Value of the Potter Type of Internal Podalic Version in the Management of Persistent Posterior Occiput Cases"—Morrell M. Jones, Pontiac.
4. "Abdominal Pregnancies"—Cleary N. Swanson, Detroit.
5. Subject to be announced—Joseph L. Baer, Chicago.
6. Recess and Discussion.
7. Adjourn for Address of President, Michigan State Medical Society.

Afternoon Session

Combined Section Meeting.

Second Session—Thursday, Sept. 13, 1934 9:00 A. M.

1. "Treatment of Trichomonas Vaginalis"—J. Campbell Smith, Detroit.
2. "Late Studies on Roentgenography of Pelvic Organs"—J. Duane Miller and Dr. Meness of Grand Rapids.
3. Paper by the Department of Obstetrics and Gynecology at the University of Michigan.
4. "Excessive Cigarette Smoking in Women and Its Effect upon Their Reproductive Activity"—Alexander M. Campbell, Grand Rapids.
5. Obstetrical Subject to be announced later.
6. Adjourn.
7. Round Table Discussion—Leader to be announced.
8. Election of Officers.

Afternoon Session

Combined Section Meeting.

Ophthalmology and Otolaryngology

Chairman: John R. Rogers, Grand Rapids.

Secretary: RALPH B. FAST, Kalamazoo.

First Session—Wednesday, Sept. 12, 1934 9:00 A. M.

OPHTHALMOLOGY
Section Clinic.

Second Session—Thursday, Sept. 13, 1934 9:00 A. M.

OTOLARYNGOLOGY

1. "Temporal Lobe Abscess of Otitic Origin"—Oliver B. McGillicuddy, Lansing.

2. "The Value of Prophylactic Methods in the Prevention of Common Colds"—Perrin Hamilton Long, Johns Hopkins Hospital.
3. "The Rhinological Management of the Allergic Individual"—James E. Croushore, Detroit Polyclinic, Detroit.
4. "Headache"—J. Milton Robb, Detroit.

Pediatrics

Chairman: W. E. COLLINS, Kalamazoo.

Secretary: EDGAR E. MARTMER, Detroit.

First Session—Wednesday, Sept. 12, 1934 9:00 A. M.

1. Address of Chairman—Ward Collins, Kalamazoo.
 2. "How the Orthopedist Can Assist the Pediatricist"—C. E. Badgley, Ann Arbor.
 3. "Vomiting in Infancy"—David J. Levy, Detroit.
- Discussion—
1. Thomas Gordon, Grand Rapids.
 2. Henry Vanden Berg, Grand Rapids.

Second Session—Thursday, Sept. 13, 1934 9:00 A. M.

1. "Infantile Eczema"—George Van Rhee, Detroit.
A discussion of the etiology, pathology, diagnosis and treatment of infantile eczema with particular attention to the differential diagnosis of infantile eczema, seborrheic dermatitis and erythroderma exfoliativa. Lantern slides.
 2. "Pyelitis in Infancy and Childhood"—W. K. Rexford, Detroit.
A review of a series of cases followed at the Children's Hospital of Michigan for the past three years. Anomalies of the urinary tract and other cystoscopic findings. Lantern slides.
 3. "Sinus Disease in Childhood"—Ferris Smith, Grand Rapids.
The incidence of sinus disease in children is greater than is generally recognized. It is particularly prevalent in Michigan. Dr. Smith's wide experience in the treatment of sinus disease in children makes this a very worth while paper.
 4. "Conditions in Childhood Associated with Hypoglycemia"—W. McKim Marriott, Dean of Washington University, School of Medicine, St. Louis, Missouri.
- Discussion—
- Thomas B. Cooley, Detroit.

Dermatology and Syphilology

Chairman: ROBERT C. JAMIESON, Detroit.

Secretary: A. R. WOODBURN, Grand Rapids.

First Session—Wednesday, Sept. 12, 1934 9:00 A. M.

1. Chairman's Address—R. C. Jamieson, Detroit.
2. "Skin Disease in Industry"—A. E. Schiller, Detroit.
3. "Immunological Aspects of Epidermophytosis"—L. W. Shaffer.
4. "Allergy in Dermatology"—M. B. Sulzberger, New York.

Second Session—Thursday, Sept. 13, 1934 9:00 A. M.

Presentation of Cases.

NOTES

1. Delegates will secure their credentials from their County Secretary and present them to the Credentials Committee at 9:00 A. M. on September 11.

2. Members will find it profitable to visit the Commercial and Scientific Exhibits.

3. Two evenings of entertainment will be provided by the Calhoun County profession.

4. Do not miss hearing our invited guest speakers.

PLAN TO ATTEND

EPOCHS IN SURGERY

(The American Journal of Surgery)

Students of world events and affairs tell that we are leaving a definite era. The curtain is descending on a human drama as clean cut as were the Elizabethan or Victorian times. For the most part this passing is concerned with social and economic phases of existence. Only the student of history or the observing man of medicine recognizes that surgery, too, is putting the finishing touches to another segment in the progress of civilization. Surgery changed with the advent of inhalation anesthesia. Another change began with the results of Pasteur's discoveries and their application by Lister. About 1890, the era of technical surgical methods began. Surgeons found a safe way to explore the abdomen, to enter the chest, to operate on the spinal cord and brain. Today an operation for an ectopic pregnancy occasions no comment, but prior to Lawson Tait's day no one ventured to enter the pelvis and correct this anatomical calamity. The things of common occurrence today were closed books to the surgeon of fifty years ago. Years from now the physician will read of this half-century about ended. Names that are casual to present-day doctors of medicine will then stand forth as those of the great pioneers.

CONTRIBUTED ARTICLES

ACUTE PERFORATED PEPTIC ULCER*

SUMMARY OF 211 CASES OF ACUTE PERFORATED GASTRIC AND DUODENAL ULCERS

H. K. SHAWAN, M.D.†

DETROIT, MICHIGAN

Perforated gastric and duodenal ulcers are usually described as being of three varieties—acute, subacute and chronic. The present report deals with acute perforations only and is confined to those cases where upon opening the abdomen gastro-duodenal contents were found to be freely escaping into the abdominal cavity. Those perforations in which at operation the ulcer was found to be sealed over (subacute) or in which a protective barrier of adhesions confined the escaped fluid or pus to a restricted area (chronic) are omitted. During twelve and one-half years preceding July 1, 1932, 211 consecutive cases of freely leaking acutely perforated gastric and duodenal ulcers have been operated upon at the Receiving Hospital of Detroit. The first ten in this series have been reported before and are included herein.¹

GENERAL FINDINGS

Of the total number of 211 cases operated upon, all but four were men, a proportion slightly greater than 50 to 1. A similar preponderance of perforated ulcers occurring among males have been reported by Dineen² (138 in 142 cases), Hinton³ (103 in 105 cases), Gilmour and Saint⁴ (58 in 64), White and Patterson⁵ (less than 3 per cent females), and others. Although not included in this report, a review of our cases shows a relative increase in subacute and chronic perforated ulcers in women.

The average age was slightly over 37 years. Slightly more than 87 per cent occurred in patients between the ages of twenty and fifty years. The four youngest in the series were all nineteen and the two oldest were respectively 60 and 70 years of age. As also noted by Luff⁶ there was a decided drop in the occurrence of perforated gastric and duodenal ulcers after the age of 50 years. While perforated gastric and duodenal ulcers have been reported at both extremes of the span of life our findings and average age agree with those reported by others (Brown,⁷ Gilmour and Saint,⁴ etc.).

Observations concerning occupation were gathered. About one-fourth had no occupation and slightly more than one-fourth were classed as laborers. Closer analysis showed that a very few had any trade or steady employment, a condition which must be considered in evaluating this particular group herein reported. Turner⁸ states somewhat as follows: "In emergencies the poor are really the better off for with them there is no incentive for delay. They are taken to the hospital promptly, and are operated upon with little ado and most excellent results. The better-to-do is usually less fortunate as quite unnecessary consultations, visits of relatives, arrangements of business affairs, fritter away much valuable time. Then the operation and convalescence are conducted in an atmosphere of apprehension and suspense which ill assorts with smooth recovery." Granting Turner's statement to be correct in the main, other factors to be considered later in this report under the heading of predisposing factors may present another less satisfactory aspect.

Nothing definite was determined from the study of nationality. Slightly over one-half (108) cases were white Americans. One was American-Indian. Twenty-nine were American negroes. The remainder were scattered among many races. Not included but recently operated upon is one Chinese. We can only state from our observations that no nationality seem to be immune from perforated ulcers.

Most reports show an increase in ulcer symptoms and ulcer perforations during the

*From the Surgical Departments of Receiving Hospital and the Medical Department of Wayne University. Read before the Michigan State Medical Society at the Annual Meeting, Kalamazoo, Michigan, September 14, 1932.

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changeable weather in Spring and Fall. In this series more perforations occurred in the months of July (27 cases) and May (24 cases) and fails to confirm the usual observation that ulcer perforation is to some extent seasonal.

No multiple perforations were encountered. One patient perforated twice and another was operated for three perforations in a four-year period.

None presented any brain lesion (Cushing)⁸ either clinically or at post-mortem.

INCREASE IN OCCURRENCE OF PERFORATION

Whether or not ulcers of the stomach and duodenum are on the increase is an undecided question. That perforations have steadily increased in occurrence has been found in the experience of Zukschwerdt and Eck,¹⁰ Hinton³ and Semb.¹¹ Bager¹² reports that perforations are more frequent but the increase has been noted only among males. I was unable to recall a single case in Lakeside Hospital, Cleveland, Ohio, during fifty-two months following March, 1909. This observation has been corroborated by Dr. W. B. Rogers.¹³ Furthermore, previous to 1920, no case of acute perforated ulcer is found on the Detroit Receiving Hospital register. Comparing the total number of operations with the number of operations performed on ruptured gastric and duodenal ulcers shows the latter to have gradually doubled and then trebled in this hospital during the past ten years.

PREVIOUS HISTORY

Investigation of previous history of gastric disturbance shows these cases to be divided into two groups. In 177 cases (83.9 per cent) a history of dyspepsia ranging from one month to thirty years (average $3\frac{1}{2}$ years) was obtained. Similar reports of a long previous history of gastric troubles frequently have been reported. Deaver¹⁴ found 90 per cent to have had a previous ulcer history. A second small group (127 cases, 12.8 per cent) denied any previous stomach trouble. In one-fourth of Judine's¹⁵ cases, perforation was the first indication of the disease. Too much dependence was not placed on statements made by a patient suffering the intense pain of perforation. However, at operation, a perforation was found in a calloused, hard chronic ulcer in the first group and a small pinpoint rupture in a soft walled acute ulcerating process in the sec-

ond. Such findings have been commented upon by Shawan and Vale¹ and others.

The patients were questioned as to what, if any, previous treatment had been received for their gastric distress previous to operation. Of the 211 cases, the charts contain no mention of any previous care in 107 cases. Of the remainder, 11 had no treatment, 71 on their own initiative had taken soda, other drugs or had been careful of their diet while 22 had had some sort of medical care from irregular to definitely supervised attention. One perforated while on anti-ulcer regime in this Hospital and several perforated while under treatment, admission to the hospital having been advised. Blackford and Baker¹⁶ state acute perforation of peptic ulcer almost never occurs when ulcer has been previously diagnosed and proper treatment instituted. However, Hinton¹⁷ in discussing Dineen's paper before the New York Academy of Surgery reports five perforations under medical treatment at Bellevue Hospital.

ETIOLOGY

Some of the predisposing factors to perforation were hard to properly evaluate. Nearly all of the cases had focal infections, bad teeth or previous operations for inflammatory diseases within the abdomen. Less than 15 per cent gave evidence of syphilis. Many were careless about diet, habits and health matters. The majority used tobacco in one form or another. Meals were irregular with many. The diet at times was meagre and at other times was over abundant. In many instances ingestion of a large quantity of fluid, not necessarily strongly alcoholic, but of the carbonated or home brew beer variety, was noticeable just before the acute onset. This was especially frequent in the summer months when dietary abuses are more common in this climate. Trauma due to straining or actual direct injury was found in eight cases. Magnant¹⁸ in reporting a case of perforation of an ulcer of the stomach after contusion of the abdominal wall states the literature records only nine such cases.

DIAGNOSIS

It is agreed that the initial symptom is sudden extremely severe pain in the epigastrium. Terms such as excruciating, annihilating, unendurable, prostrating have been used to describe what has also been

termed a catastrophe. Moynihan has aptly stated "the patient was struck motionless." Nevertheless there is a small minority in which certain prodromal symptoms are recorded and in which the onset is less abrupt. Three in this series had premonitory distress and one of these had vomiting of blood before the pain appeared. Pain, once established, remained a constant symptom in all but 8 per cent. Subsequently, pain in the latter became intermittent or ceased temporarily. In all of these there was found either a minute perforation or small opening in a soft walled recent ulcer temporarily plugged with mucosa or food particles.

Rehfuss¹⁹ states that in his experience perforation is usually associated with vomiting. He quotes Wilmoth, maintaining that absence of vomiting is a significant symptom. Judine¹⁵ likewise reports vomiting to be rare. In this series 42 per cent vomited once or twice and 20 per cent had no vomiting. Three patients vomited continuously.

The clinical findings are most important in arriving at a diagnosis. Moynihan²⁰ has emphasized the extreme degree of prostration and the tense rigidity of the whole body. While such is usually the case, nevertheless intermittent rigidity of the abdomen occurred in 4.5 per cent of our cases. Obliteration of liver dullness occurred in about 23 per cent of this series. Hyperresonance over the liver indicates either a large amount of gas escaping immediately with perforation, a long interval between perforation and the discovery of tympany, or distention of some other intra-abdominal hollow organ. True shock was rarely seen except in late cases gradually taking on the appearance of peritonitis.

A most important finding in our experience has been that upper abdominal muscles remain continuously splinted in subdiaphragmatic conditions, and that at the end of expiration they relax momentarily with those above the diaphragm. (Vale.²¹)

It is generally agreed that shortly after perforation, the temperature, pulse, respiration, leukocyte count and polymorphonuclear leukocytes remain about normal and that all are elevated with the passing hours. In this series the temperature on admission was below 99 degrees in 60 per cent; the pulse rate below 100 in 70 per cent; the average leukocyte count in 168 cases was about 13,000 and in the same number of polymorphonuclears averaged about 80 per

cent. Singer and Vaughan²² have emphasized the value of fluoroscopic and x-ray examinations of the abdomen for the presence of air. They state that by these means a correct diagnosis was arrived at in 86 per cent of the cases proven by laparotomy. In spite of the fact that 85 per cent of these cases were correctly diagnosed clinically on admission we have, especially of late, found fluoroscopical examination to facilitate diagnosis in questionable cases. Resort to flat x-ray plate examination will often differentiate intestinal obstruction from perforation. In attaining a prompt diagnosis the history and clinical findings were found to be of far greater value in the time permitted than all laboratory investigations.

In the differential diagnosis several other acute abdominal emergencies have to be considered. Chief among these are gall stone colic, acute pancreatitis and the obstructive type of appendicitis. The history and fulminating course of the last together with the sudden remission of pain with rupture make this variety of acute appendicitis a problem to be reckoned with. Moynihan has emphasized the continual restlessness with gall stone colic and the prostration and continual rigidity in pancreatitis and acute ruptured ulcer. Shock and continuous vomiting usually point to pancreatitis. Whipple²³ in discussing the differential diagnosis of intestinal obstruction believes the only important non-operative lesions that should be ruled out are pneumonia, tabetic crisis and coronary or mesenteric thrombosis. Careful examination may rule out pneumonia, arteriosclerosis and signs of endocarditis should suggest coronary embolus and history and physical signs will usually eliminate tabes. The same statement holds with ruptured ulcers. If these three conditions complicating acute perforated ulcers are eliminated, no time should be wasted in making a differential diagnosis when everything points to an acute abdominal lesion requiring immediate operative treatment.

TABLE I. LOCATION IN 211 CASES OF PERFORATED ULCER

LOCATION	REC OV-	DIED	TOTAL	PER CENT
	ERED			DIED
Duodenal	97	27	124	26.6
Pyloric	26	13	39	33.0
Gastric	36	11	47	23.3
Gastro-jejunal	0	1	1	100.0
	159	52	211	

The majority of perforated ulcers in our series occurred in the duodenum (Table I). Luff⁶ in his compilation masses pyloric and duodenal ulcers together because the results from operative treatment were so similar. In many of our cases the anatomy was so distorted by the pathology presented that we were unable to differentiate between pyloric and duodenal ulcers. Of the cases of perforation collected from Swedish hospital by Badger,¹² two-thirds were gastric and one-third duodenal. From the anatomical standpoint, however, one might rather class the pyloric with the gastric perforations, thus changing the frequency as well as the mortality percentages. If we accept this observation, it seems that corrected reports are gradually showing more gastric perforations than previously supposed.

All reports show a direct increase in the mortality as compared with the time elapsing between the occurrence of the acute perforation and the operative treatment. Turner⁸ states the time factor has everything to do with the results in these great emergencies but believes that cases should be classified according to the extent of the pathological damage which has occurred up to the time of operation, and not on the number of hours which have elapsed since the onset of the attack. In this series the mortality rate increased directly with the size of the perforation and the amount and type of escaped gastroduodenal contents. The mortality in 160 cases in this series of 211 cases operated upon under 12 hours was 13.1 per cent. In 51 cases operated upon after 12 hours the mortality was 56.8 per cent.

TABLE II. AGE INCIDENCE AT TIME OF OPERATION AND DEATH

AGE	NUMBER	PER- CENTAGE	NUM- BER DIED	PER- CENTAGE AGE DIED
Under 20 (All 19)	4	.89	0	00.00
20-30	59	27.96	14	23.73
30-40	76	36.01	19	25.00
40-50	49	23.22	12	24.49
50-60	21	9.95	5	23.81
60-70	2	.9	2	50.00

The incidence of deaths with reference to the various decades was investigated. It was found that between the third and sixth decades there was very little variation in the mortality percentage (Table II). Williams and Walsh²⁴ likewise found no apparent relation between age and prognosis.

The mortality in the entire series was 24.22 per cent. Of these 36 per cent died within the first twenty-four hours. It seems reasonable to ascribe these deaths to the severity of the attack, to operative shock, to anesthesia or, most likely, to a combination of many factors. The causes of death of the remaining two-thirds were found to be peritonitis, subsequent complications chiefly cardio-respiratory and following secondary operations. Six cases succumbed after secondary operations for incisional hernia, intestinal fistula, empyema, pelvic abscess and similar postoperative complications. Our findings agree with those of Fleming²⁵ who emphasized the fact that acute diffuse peritonitis is the commonest fatal complication. From postmortem examination we conclude that peritonitis was the chief or only determinable cause of death in three-fifths of the cases in this series.

It is somewhat difficult to evaluate the rôle of anesthesia in this series. Although used in but few cases and these in the more critical condition, the mortality was overwhelmingly highest when the least nocuous anesthetic agents were employed. While our experience has been unsatisfactory with local anesthetic, Watson²⁶ prefers to use it. Judine¹⁵ formally used local, but states that he has better results with splanchnic anesthesia. Of those receiving ether or gas-ether the mortality was 28 and 26 per cent, respectively. Less than 12 per cent of those receiving spinal anesthesia died.

During the more recent years in this series, spinal anesthesia has become the anesthetic of choice for operations on perforated gastric and duodenal ulcers. The marked reduction in the mortality records of the Receiving Hospital with the use of spinal anesthesia in acute surgical emergencies has been commented upon by Krieg.²⁷

SURGICAL PROCEDURES

In order of their magnitude, the various operative procedures which are used in the treatment of acute perforated ulcer may be summarized under six headings: 1. Drainage alone; 2. Simple closure; 3. Excision ulcer and closure; 4. Excision ulcer and pyloroplasty; 5. Excision ulcer and closure plus excision anterior half pyloric sphincter muscle; 6. Closure with added (primary) gastro-jejunostomy; 7. Partial gastroduodenal resection (Table III).

1. *Drainage Alone.* Simple abdominal

drainage without any operative treatment of the ulcer has been advocated for the severely sick patient by Morris²⁸ and Warbasse.²⁹ This operation can be done under local anesthesia with the patient in his bed. Such a simple procedure may save those in extremis and might, by draining off excess intra-abdominal fluid, allow approximation of the structures near the perforation and promote sealing over by adhesions. While abdominal drainage alone was not employed in any of this series of acute cases we have used it with satisfaction in subacute perforations.

2. *Simple Closure.* Most surgeons agree that immediate closure of the perforated lesion is the prime essential in the surgical treatment. Guthrie³⁰ published the results of a questionnaire answered by a large number of American surgeons. By far the greater number were conservative and employed only simple closure of the perforated ulcer. Most surgeons believe that complications following simple suture are rare and that they are best cared for at a future time when the dangers of spreading peritonitis are remote. Simple closure was performed in three-quarters (155) of the cases in this series.

3. *Excision of the Ulcer and Closure.* In this operative procedure, a small amount of ulcerated tissue adjacent to the perforation was excised. It has the advantage of removing the diseased area and allowing the closing sutures to be placed in healthy tissues. While operating time was but slightly increased, the mortality percentage in this series was surprisingly increased (28.57 per cent).

4. *Excision Ulcer and Closure by Pyloroplasty.* This operation, advocated by Dowden³¹ has the advantages of: 1. Removing the ulcerated area; 2. Increasing the size of the lumen by lengthwise excision and crosswise suture; 3. Allowing the placement of sutures in healthy tissue; 4. Closure with structures coupled as normal; 5. Stopping pylorospasm; 6. Permitting reflux flow of bile through the pylorus. The main difficulty in pyloroplasty is encountered through lack of mobility of the duodenum. In this series 3 were done by the Horsley method and 3 by the Judd method with no deaths.

5. *Excision Ulcer and Closure with Added Anterior Hemisphincterectomy.* This procedure can be used for perforated ulcers several centimeters distal to the pyloric ring. Deaver,¹⁴ long an advocate of added gastro-

enterostomy, later advised, in selected cases, excision and closure of the ulcer plus extramucosal excision of the anterior half of the pyloric sphincter. He emphasized the abatement of pylorospasm. While not used in any of the cases in this series, its employment is not contra-indicated in proper instances.

6. *Closure with Gastroenterostomy.* This treatment is advanced for cases in which primary closure has been unsatisfactory because of insecure suture or strictured lumen. It allows drainage of stomach contents as well as entrance of alkaline bile to acid gastric contents. In many cases, the results have been satisfactory. In other cases, the operation has been prolonged, the spread of peritonitis increased and subsequent marginal ulcers have occurred. It is rarely employed with the advanced or severely sick. Used shortly after perforation, especially of an old chronic obstructive ulcer in an adult with well-developed, pyloric obstruction, the immediate and subsequent results are eminently satisfactory. As a routine procedure, it condemns itself. Closure of the perforation with added gastrojejunostomy was employed 22 times with a mortality rate of 22.72 per cent.

7. *Partial Resection.* Certain continental and an occasional American surgeon have leaned toward a more radical procedure, such as gastroduodenectomy, in order to avoid the occasional late complication resulting from any of the previously mentioned procedures. In certain cases this procedure is possible but rarely will the condition of the patient following perforation permit of such radical treatment. In this series primary gastro-duodenal resection was not done.

Except in the rare case of gross contamination of the peritoneal cavity was irrigation of the abdominal cavity done. Buerkle de la Camp³² used extensive irrigation with Ringer's solution and drainage. Bager¹² irrigates the abdominal cavity and closes without drainage. However, a study of the total number of cases reported by Bager fails to show that the results were improved by irrigation. Fleming²⁵ believes that irrigation is incorrect and obsolete.

Drainage was employed in 188 cases, not used in 15 and not recorded in 8 cases. Of the 15 cases not drained, one died. Bacteriological examination of the free fluid in the abdominal cavity was of no value in decid-

ing the necessity of drainage. Turner⁸ states "the provision of a drain tract need never do harm, but to do without it may cause a fatality."

In this series the operative treatment was individualized. The condition of the patient, the extent of the pathology and the degree of obstruction indicated the operative technic. More and more the tendency was to do nothing more than absolutely necessary. Additional operative procedures were left for a subsequent time and then carried out only when indicated. The main indication in the presence of a perforation other than preventing further leakage was to combat the attending peritonitis. As Singer and Vaughan²³ have stated, "any measure which serves no immediate purpose and which adds to the length of the operation or enhances the spread of the peritoneal infection seems hardly justifiable."

TABLE III. TYPE OF OPERATION EMPLOYED

TYPE OF OPERATION	NUMBER OPERATED	NUMBER DIED	PERCENT-AGE DIED
Simple Closure	155	39	25.16
Excision Ulcer and Closure.....	28	8	28.57
Closure with Gastro-Enterostomy	22	5	22.72
Excision Ulcer and Pyloroplasty	6	0	00.00

POSTOPERATIVE CARE

Careful attention to the postoperative treatment is most important. As soon as the patient reacted he was placed in the sitting position. Morphine was used as indicated. Saline and glucose were used liberally by intravenous and subcutaneous routes (1,000 c.c. every 8 hours) for four or five days. Then, hot water and hot sugared tea were given by mouth because they immediately pass from the stomach into the intestine. Todd,³³ by fluoroscopic examination has shown that cold fluids cause a pylorospasm, lasting from 15 to 30 minutes. Early feeding by rectum and by mouth was avoided as it stimulates early peristalsis. The postoperative dietary treatment as advised by Dineen² commends itself.

CONCLUSIONS

1. In reporting 211 cases, it appears that perforations of gastric and duodenal ulcers are gradually increasing in number; by far most are men of all nationalities between 20 and 50 years.

2. The great majority of perforating ulcers gave a previous history of chronic ulcer (84 per cent).

3. The mortality increases with the pathology presented. Size of the opening, the amount and toxicity of the peritoneal soiling and the time allowed to elapse between rupture and operative treatment dominate the results.

4. The diagnosis is essentially clinical, the observed findings being of far greater value in the time permitted than all laboratory examinations with the exception of x-ray.

5. Spinal anesthesia is the most satisfactory anesthetic, as to mortality and morbidity.

6. The mortality in 160 of these operated upon under 12 hours was 13.1 per cent. In 51 cases operated upon after 12 hours the mortality was 56.8 per cent. The total operative mortality in this list of 211 cases was 24.64 per cent.

7. While the type of operative treatment employed was individualized the latter tendency has been to lessen the magnitude of the procedure.

BIBLIOGRAPHY

- Shawan, H. K., and Vale, C. F.: *Ann. of Surg.*, 78: 342, 1923.
- Dineen, P.: *Ann. of Surg.*, 90:1027, 1929.
- Hinton, J. W.: *S., G. & O.*, 52:778, 1931.
- Gilmour, J., and Saint, J. H.: *Brit. Jour. of Surg.*, 20:78, 1932.
- White, W. C., and Patterson, H. A.: *Ann. of Surg.*, 94:242, 1931.
- Luff, A. P.: *B. M. J.*, 2:1128, 1929.
- Brown, H. P.: *Ann. of Surg.*, 89:209, 1928.
- Turner, G. G.: *S., G. & O.*, 52:273, 1931.
- Cushing H.: *S., G. & O.*, 55:1, 1932.
- Zukschmerdt, L., and Eck, T.: *Deutsche. Ztschr. f. Chir.*, 232:299, 1931.
- Semb, C.: *Acta. Chir. Scand.*, 66:315, 1930.
- Bager, B.: *Acta. Chir. Scand. (Supp. II)*, 64:5-320, 1929.
- Rogers, W. B.: Personal Communication.
- Deaver, J. B.: *Ann. of Surg.*, 89:529, 1929.
- Judine, S. S.: *Bull. et Mem. Soc. nat. de chir.*, 55: 1233, 1929.
- Blackford, J. M., and Baker, J. W.: *Am. J. of Surg.*, N. S., 12:18, 1931.
- Hinton, J. W.: *Ann. of Surg.*, 90:1100, 1929.
- Magnant, J. S.: *Bull. et Mem. Soc. nat. de chir.*, 58:357, 1931.
- Rehfuss, M. D.: *Prog. Med.*, Phila., Lea & Febiger (December), 1931.
- Moynihan, B. G. A.: *Pract.* 126:5, 1931.
- Vale, C. F.: *J. A. M. A.*, 80:321, 1923.
- Singer, H. A., and Vaughan, R. T.: *S., G. & O.*, 51:10, 1930.
- Whipple, A. O.: *Boston Med. and Surg. Jour.*, 197: 218, 1927.
- Williams, H., and Walsh, C. H.: *Lancet*, 218:9, 1930.
- Fleming, B. L.: *J. A. M. A.*, 97:6, 1931.
- Watson, J. H.: *Brit. M. J.*, 2:169, 1930.
- Krieg, E. G.: *J. Mich. M. Soc.*, 31:456, 1932.
- Morris, R. T.: *Ann. Surg.*, 90:1101, 1929.
- Warbasse, J. P.: Quoted by Guthrie.
- Guthrie, D.: *N. Y. State Jour. Med.*, 23:66, 1923.
- Dowden, J. W.: *Edin. Med. Jour.*, N. S., 2:145, 1909.
- Buerkle de la Camp, H.: *Int. Abst. of Surg.*, 50:108, 1930.
- Todd, T. W.: *Behavior Patterns of the Alimentary Tract*, Balti. Waverly Press, 1930.

PERIARTERITIS NODOSA: WITH CASE REPORTS

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Since Kussmaul and Maier¹ in 1866 drew attention to periarteritis nodosa, about 150 cases² have been described. Troutman³ saw in the Pathological Museum in Vienna a specimen showing aneurysms localized to the mesenteric artery. This was described and named by Rokitansky as Multiple Aneurysmata some years before it was recognized as a part of the picture of periarteritis nodosa. During the half century following Kussmaul and Maier, 37 more cases were recorded, all but five of them in Europe. In the last few years the number of cases recognized in this country has markedly increased, though it still appears to be rare here as compared to Europe. As has been brought out by many workers, the disease is undoubtedly of relatively frequent occurrence, though often unrecognized. In the autopsy service at the University Hospital, Ann Arbor, Michigan, two cases of periarteritis nodosa were seen within a period of ten months.

CASE REPORTS

Case I. J. B., a 46 year old white male factory worker, was admitted to the Medical Service complaining of pain in the epigastrium, weakness, and loss of weight. He had been in good health until six months previous to admission, at which time there was an insidious onset of pain in both hip joints. This became so severe that he could not walk without crutches. As this pain gradually subsided, his left knee became swollen and tender, and there was aching of the joint, severe enough to keep him awake at night. His left ankle became similarly involved and he complained of recurrent pains through both lower extremities. He also developed some parasthesia in his legs. Five weeks previous to admission the patient suffered a dull pain in the mid-epigastric region. It was constantly present, not relieved by soda, and often aggravated by food. He had always been constipated, and on one occasion, just previous to admission, he had noticed tarry stools. He had become progressively weaker, losing 25 pounds in weight since the onset of his illness.

There was nothing of significance in the past history. The patient's father died at the age of 66 years of heart disease; his mother died at the age of 68 years of apoplexy.

On physical examination, the patient was slightly short of breath, but not truly dyspneic, and not cyanotic. He was complaining of pain in the epigastrium, and of an aching sensation in his feet. The heart was not enlarged to percussion. The first sound at the apex was split; the aortic second sound was markedly accentuated. The peripheral vessels were tortuous and sclerotic, and the blood pressure was 186/130. The abdomen was somewhat tense and distended and there was considerable midepigastric tenderness, but no true muscle spasm. There were a few palpable lymphnodes in the neck, axillae, and inguinal regions. Examination of the fundi showed an advanced arteriosclerosis of the retinal vessels. There was hemorrhage and exudate within the retina.

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Blood examination revealed 4,100,000 red blood cells per c.mm., 14,000 white blood cells, and a normal differential count. The urine contain albumin (four plus), 10 to 15 red blood cells, 5 to 8 white blood cells, and one or two granular casts per high power field. The stools were negative except for a positive benzidine reaction. Kidney concentration tests showed fixation of the specific gravity of the urine at 1.012. Non-protein nitrogen was 34.2 mgm. per 100 c.c. of blood. Phenolsulphonethalein tests showed an excretion of 25 per cent of the dye in two hours. The Kahn test was negative. Results of gastric analyses were normal. X-ray films of the gastrointestinal tract revealed no lesion. Electrocardiograms were repeatedly regarded as normal.

The patient was placed on a "nephritic" diet, was given euphyllin, 0.1 gram, *tres in diem*, and codeine and morphine sulphate as needed. He did not improve. Blood pressure remained between 180 to 200 systolic, and 130 to 145 diastolic. Several days after admission he complained of pain in the right side of his chest, was dyspneic, had a slight cough, and raised blood-tinged sputum. There was no fever. A friction rub was heard anteriorly. The non-protein nitrogen of the blood gradually rose to 78 mgm. per 100 c.c., the patient became irrational, and expired 20 days after admission to the hospital.

Autopsy showed the body, which measured 169 cm. in length, to belong to the asthenic constitutional type. The face was slightly icteric. There was a moderate pitting edema of both ankles. The lungs were moderately congested and edematous, but showed no other pathology. The heart was slightly enlarged, weighing 400 gm. Scattered over the surface of the heart, and especially in the region of the atrioventricular junction, there were many small yellowish white nodules, of rubbery consistency. They protruded above the surface of the heart, giving it a patchy varicose appearance. Section of these nodules revealed an artery to be present in each, with the lumen markedly reduced and the periarterial tissues increased. A few of the nodules had a purplish color. Cross section of these revealed an aneurysmal dilatation, filled with clotted blood. There were many small areas of fibrosis in the heart wall, all of them well healed. The larger coronary arteries revealed only early atherosclerotic changes, not being involved in the process described above.

In the abdomen the smaller arteries about the duodenum and along the lesser curvature of the stomach, in the mesentery, and at the hilus of the spleen, as well as the branches of the hepatic artery, had many small yellowish white nodules, several of which were almost as large as peas. Each nodule contained a blood vessel whose lumen was diminished, with the arterial wall and periarterial tissues markedly thickened and indurated. As in the heart, several of these nodules had a purplish color, appar-

ently due to the thrombosed blood contained within the localized arterial dilatations. The kidneys were small. When the fibrous capsule, which was markedly adherent, was stripped away, the surface of the kidney was mottled with irregular plaques having a bright lemon color. These plaques, of varying size,

of adipose tissue with fibrosis and myxomatous change. Fibrosis of skin resembling scleroderma. Multiple small ulcerations of esophagus. Slight old leptomenigitis. Edema, congestion, and parenchymatous degeneration of all organs."

Case II. J. L. B., a 16 year old colored male, was



Fig. 1. Case I. Coronary artery showing an eccentric fibrosis of all coats with an active inflammatory infiltration. Late stage in the evolution of the lesion of periarteritis nodosa with organization of the thrombus in the aneurysm. Hemalum and eosin. X 65.

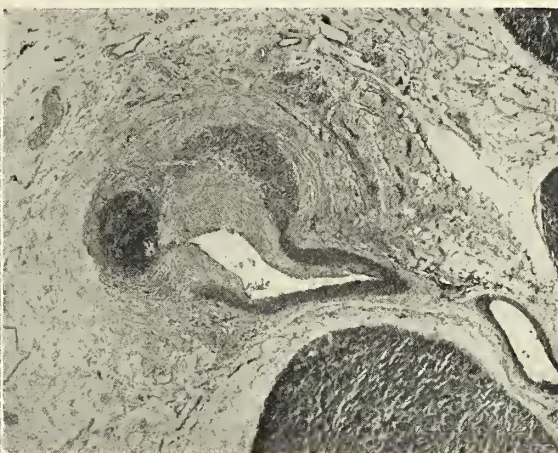


Fig. 2. Case II. Coronary artery showing the eccentric nodular formation characteristic of periarteritis nodosa. The media has ruptured and an aneurysm has been produced. In the aneurysmal sac a portion of the thrombus remains unorganized. This is a somewhat earlier lesion than is shown in Figure 1. Hemalum and eosin. X 65.

were slightly raised above the surface. Section of the kidneys revealed many nodules of the type described elsewhere in the body. There were several circular purplish areas, measuring about 7 mm. in diameter, which apparently were tremendously dilated arcuate arteries containing thrombi.

On *microscopical examination* the medium and small sized arteries showed the changes of periarteritis nodosa in all stages. The lesions were most marked in the heart, kidneys, pancreas, stomach, esophagus, and in the mesenteric and hepatic arteries. Some of the larger arteries showed only sclerosis, while many of the smaller ones showed an obliterating endarteritis with thrombosis. Thrombi showing all stages of organization were present; many of them were completely replaced by a dense scar tissue; others were organized and fenestrated. There were localized areas of marked thickening of the intima, occasional defects in the intima and media, and perivascular inflammatory infiltrations. In the involved organs, particularly the kidneys, infarcts in all stages were present. Even the vessel walls of the skin were fibrosed and thickened. There was a fibrosis dermis extending into the subcutaneous tissue, and suggesting the appearance of scleroderma. The epidermis and skin structures were atrophic. The lungs showed no evidence of arterial disease.

Pathological diagnosis (Dr. A. S. Warthin): "Diffuse obliterating thromboarteritis with periarteritis nodosa in the fourth stage (coronary, mesenteric, pancreatic, renal, periadrenal, spermatic, and subcutaneous arteries). Multiple infarctions of kidneys and myocardium. Organizing unresolved croupous pneumonia. Active latent syphilis of aorta, liver, adrenals, and testes. Early hepatic cirrhosis. Chronic passive congestion of spleen with early fibrosis. Chronic interstitial nephritis with multiple infarctions. Chronic atrophic catarrhal gastroenteritis. Colloid goiter. Hyperplastic thymus with fibrosis. Old appendectomy. Marked serous atrophy

first seen in the Otology Clinic complaining of swelling of the right side of the face. The swelling, associated with moderate pain, had not changed appreciably during the three months since its onset. During the past few weeks he had had a yellow discharge from his nose, occasionally containing small spicules of bone. Two years previous to admission, the patient had mumps. At that time his right knee was swollen and painful, and for some time he walked only with great difficulty. About this time he had a swelling of the right inguinal region, from which there was a yellowish discharge. These processes gradually subsided. There was no history of syphilis, though patient was exposed during the past year.

The mother was living and well. The father died of influenza. There were three siblings, all living and well.

Physical examination revealed an ulceration of the soft palate which extended back into the nasopharynx. The border of this ulcerated area was punched out, and there was a fetid odor. There were a few palpable lymphnodes in the epitrochlear, axillary and inguinal regions. The cranial bosses were prominent, the scapulae were slightly concave along the vertebral border, and there was a slight anterior bowing of the tibiae.

The patient was regarded as suffering from tertiary syphilis: a leucic osteomyelitis of the maxilla and palate. Subsequent report on Kahn test of the blood was positive (four plus). The spinal fluid Kahn reaction was negative, as was the colloidal gold curve. During the ensuing four months the patient was given intensive bismuth and arsphenamine antileptic therapy. Two months later he was again seen in the Dermatology Clinic, and was advised to have further treatment.

Our next contact with this patient was seven months later when the coroner ordered an autopsy on his body. He had apparently been well until eight hours before his death. He had complained

of headache, vomited twice, had what was described as a convulsion, and become comatose.

At autopsy the spinal cord appeared normal. There was a moderate edema of the brain and meninges, but no other lesion of the central nervous system. There were many dense adhesions over the anterolateral aspect of the right lung. The lungs were firm, heavier than normal, and contained many patchy areas of lobular pneumonia, in part hemorrhagic. The heart was somewhat enlarged, weighing 430 gm. The cecum was firmly adherent to the anterior abdominal wall. The left kidney was absent from its normal position. In the right half of the abdomen there was an irregular mass, representing both kidneys. The upper half of this had the contour of a normal kidney, whereas the lower portion was bulbous. Two ureters emerged from a single pelvis. The aorta showed a well-marked atherosclerosis.

On *microscopical examination* the small arteries in practically all organs examined, including the heart, kidneys, liver, adrenals, gastrointestinal tract and epididymis, showed changes leading to complete obliteration. This process was characterized by swelling and edema of the media with localized areas of necrosis, heavy cellular infiltrations, and areas showing productive intinitis, small localized aneurysmal dilatations, and productive nodular formations in the adventitia. Some of the arteries were completely obliterated, with infarctions resulting. Protracted search for spirochetes by appropriate staining methods was without result.

Pathological diagnosis (Dr. C. V. Weller): "Generalized arterial disease. Periarthritis nodosa. Terminal acute purulent bronchitis and hemorrhagic purulent lobular pneumonia. Pulmonary congestion, hemorrhage, and edema. Anomalous kidneys (fused kidneys lying on right side). Renal insufficiency. Uremia (?). Acute passive congestion and parenchymatous degeneration of all organs."

DEFINITION

Periarthritis nodosa is an acute inflammatory disease, of small and medium sized blood vessels, and of unknown etiology. It is characterized by necrosis of the media with deposition of fibrin; secondarily there follow cellular infiltration and granulation tissue formation, with varying degrees of intimal proliferation. Eventually, aneurysmal dilatation, rupture of the aneurysm, or thrombosis of the diseased artery may occur. Death may be the result of hemorrhage following the rupture of an aneurysm, or it may follow infarction of essential organs through the occlusion of blood vessels.

ETIOLOGY

The disease is regarded by practically all observers as a form of sepsis. Syphilis was early advanced as the etiological factor. But as the disease was more frequently recognized, syphilis came to have less and less significance as the causative agent. Evidences of syphilis in patients dying of periarthritis nodosa were no more frequent than in patients dying from all other causes. Among the many factors pointing away

from syphilis have been the failure to demonstrate spirochetes in the arterial lesions, the freedom of the cerebral arteries from periarthritis nodosa, whereas syphilis so often attacks them, the absence of gummas in periarthritis nodosa, the rapid course of the disease, often proving fatal in six to twelve weeks, and the evidence brought forth by experimental workers in producing periarthritis nodosa in animals in which syphilis is unknown.

That periarthritis nodosa has a specific causative agent and is a disease *sui generis* cannot be stated at the present time. No specific micro-organism has ever been demonstrated, though much of the evidence is in favor of it. Von Haun⁴ produced the disease in guinea pigs by the inoculation of a patient's blood and concluded that the disease is a specific infection. Others have not been successful in reproducing this work. Harris and Friedrichs⁵ succeeded in producing the disease in experimental animals. Spiro⁶ does not regard it as a specific disease, but only as a form of post-infectious mesarteritis, resulting from various infections. Wiesel⁷ and Wiesner⁸ have each found changes, especially marked in the media, in arteries in various acute infectious diseases. Gruber⁹ maintained that the arterial lesions are an allergic phenomenon, resulting from different infectious agents. On the other hand, favoring the specific infectious theory is the rarity of these lesions in spite of the many acute infections, and the uniformity of the pathology once the lesions are established. At present it is best to state only that this is a disease appearing as an infection, possibly of specific etiology, or possibly a stage in one of the ordinary infectious diseases.

INCIDENCE

As previously stated, periarthritis nodosa is a relatively rare disease, the total number of reported cases being about 150. In a necropsy series of 2,035 cases at the Peter Bent Brigham Hospital, only two examples of periarthritis nodosa were seen.¹⁰ The disease occurs five times as frequently in males as in females.¹¹ While 70 per cent of the cases occur between the ages of 10 and 40 years,¹² authentic cases have been reported at both extremes of life. In none of the studied cases was it possible to show a family relationship or predisposition, nor

was the disease related in any apparent manner to the patient's occupation.

PATHOGENESIS

The changes in periarteritis nodosa occur only in the arteries which measure three to five millimeters in diameter or smaller, roughly equivalent in size to the normal coronary artery. Veins and capillaries are not affected. The nodules vary in size from just visible to the size of a large pea. They are yellow-white to white and moderately firm. Their consistency apparently increases with the age of the process. The nodule is usually restricted to one side of the artery, often accompanied by an associated occlusion. The larger nodules, exceeding the size of a hazel nut, are usually aneurysmal dilatations, and are almost always thrombosed.

The earliest changes suggest that the affecting agent probably enters the arterial wall via the *vasa vasorum*, or through the perivascular lymphatics, and affects primarily the media, and later the intima and adventitia. Long before the patient has symptoms, there is swelling of the muscle cells of the media with loss of nuclei. A marked edema develops, accompanied by a fibrinous exudate beneath the intima. The entire thickness of the media may become necrotic. During this stage there is an infiltration of leukocytes, plasma cells, and eosinophils into the necrotic areas. The adventitia is not yet involved. But as the disease progresses, the infiltration of cells becomes heavy, extending into both intima and adventitia. The elastica interna becomes fragmented. With the extension of the exudate into the intima, fibrin threads may penetrate into the lumen and leukocytes collect about them. A reactive intimal proliferation results, eventually leading to stenosis or occlusion of the vessel. The active process is now at its height, with thrombosis of the vessel and secondary infarction of the organ commonly occurring. Likewise, rupture of the blood vessel may occur at this time.

If the patient survives, the process of repair begins. As the polymorphonuclear cells decrease, the lymphocytes and plasma cells increase. The necrotic media, and the injured portion of the adventitia and intima, are gradually replaced by a cellular granulation tissue, rich in fibroblasts and in new-formed blood vessels. Intimal proliferation is usually marked when the changes in

the media are not severe. If a thrombus is present, it may be organized and canalized. The intimal thickening is most marked at the site of the lesion, and spreads diffusely beyond it, so that a thickened intima may overlie media that has not been affected.

In those arteries in which the process goes on to healing, this new-formed connective tissue is changed into scar tissue. Then, heavy scar tissue remains as the sole evidence of the severity of the infection, and may lead to nodular thickenings. Relatively large blood vessels may be reduced to small channels. Contracted kidneys, myocardial scars, muscle atrophy, and nerve degeneration are to be expected.

SYMPTOMS

There is usually a sudden onset, characterized by a mild sepsis and scattered local manifestations of vascular disease. Fever is moderate, continuous, and usually present from the very onset. In general, the patient will complain of a progressive weakness, pains in the muscles and joints, abdominal pains, polyneuritis, anesthesia and paresthesia, tachycardia, and symptoms of renal insufficiency. The white blood count may range from 10,000 to 30,000 cells per c.mm. A progressive anemia may be expected.

The symptoms depend on the organs involved, and on the stage of the lesions in the vessel wall. As to frequency, the kidneys, heart, liver, and gastrointestinal tract are involved in the order named; and the disease has been classified according to the outstanding organ involvement. The renal type is characterized by hypertension, hematuria, albuminuria, and progressive renal insufficiency. The cardiac type shows symptoms of myocardial disease, due to narrowing and occlusion of the smaller coronary arteries. The abdominal type has attacks of recurrent abdominal pain, accompanied by a rise in temperature and leukocytosis. Cerebral symptoms are extremely rare. Fletcher¹³ reported one such case, and Dickenson¹⁴ one presenting marked symptoms of an acute meningitis, yet with a clear spinal fluid. Likewise, Bennett and Levine¹⁰ described meningeal symptoms in a case with increased cells in the spinal fluid but no organisms.

Early in the course of the disease, during the so-called alterative-degenerative stage, the patient may be symptom-free. In

the more advanced exudative-inflammatory state, he may present the picture of an acute infection with continuous or intermittent fever, chills, and a relatively high leukocytosis. The localizing symptoms in the heart, kidneys, and gastrointestinal tract depend entirely upon involvement of blood vessels of these organs. Death may occur at this time from renal insufficiency, ruptured aneurysm, or cardiac infarction.

If the patient survives this stage, nodules may first be recognized growing out from the vessel wall. If the disease is localized, fever and leukocytosis may disappear with clinical cure resulting. More often, however, with widespread involvement, there will be anemia, marasmus, and emaciation. Even if the symptoms subside, there is usually a series of exacerbations with lesions in all stages present simultaneously. Hypertension, nephritis, renal insufficiency, cardiac symptoms, gastrointestinal complaints may be intense.

To follow the process one step farther, as is done by Arkin, in the stage of healing the symptoms are those of degeneration of the various organs of the body, due to deficient blood supply. Renal insufficiency, cardiac failure, cachexia, polyneuritis, and polyglandular insufficiency may be expected.

DIAGNOSIS

Diagnosis during life is infrequent. In a series of 38 cases reviewed by Lamb, antemortem diagnosis was established in only two instances. The diagnosis can be made with certainty only by excision of a nodule for microscopic examination. However, in a patient complaining of fever, polymyositis and polyneuritis, cramplike pains in the abdomen, symptoms of nephritis, plus variable symptoms due to disturbance of the blood supply to various organs, the disease may well be suspected.

PROGNOSIS

In all cases the prognosis is bad. Seventy per cent of the afflicted patients die within three months. In Lamb's review of the

literature there is reported one cure, but that patient died two years later of portal thrombosis. Even after the patient has passed through the stage of healed granulation tissue formation described by Arkin, the deficient blood supply in the organs essential to life will result in renal insufficiency, cardiac failure (digitalis has no effect), severe liver disease, marasmus, and polyglandular insufficiency. Any one of these may be sufficient to cause death.

CONCLUSIONS

1. Though periarteritis nodosa is seldom recognized clinically, it probably occurs with relative frequency.
2. Periarteritis nodosa is apparently a specific infectious disease, though the causative agent has not been demonstrated. It has no demonstrable relationship to syphilis.
3. Though the diagnosis may be suggested by the symptoms, it can be established with certainty only by microscopic examination of small arteries.
4. The disease is progressive, leading always to a fatal termination.

REFERENCES

1. Kussmaul, A., and Maier, R.: Ueber eine bisher nicht beschriebene eigenthumliche Arterienerkrankung (Periarteritis Nodosa). *Deutsches Arch. f. klin. Med.*, 1:484, 1865.
2. Arkin, A.: A clinical and pathological study of periarteritis nodosa. *Amer. Jour. of Path.*, 6:401, 1930.
3. Troutman, W. B.: Case of periarteritis nodosa with autopsy findings. *Kentucky Med. Jour.*, 29:144, 1931.
4. von Haun, F.: Patho-histologische und experimentelle Untersuchungen über Periarteritis Nodosa. *Virch. Arch. f. path. Anat.*, 227:90, 1919.
5. Harris, W. H., and Friedrichs, A. V.: Periarteritis nodosa with a classification of the pathology. *Jour. of Med. Research*, 43:285, 1922.
6. Spiro, P.: Zur Kenntnis des Wesens der Periarteritis Nodosa. *Virch. Arch. f. path. Anat.*, 227:1, 1919.
7. Wiesel, H.: Die Erkrankungen arterieller Gefäße im Verlaufe akuter Infektionen. *Ztschr. f. Heilk.*, 27:262, 1906.
8. Wiesner, R.: Ueber Veränderungen der Koronargefäße bei Infektionskrankheiten. *Wien. klin. Wchnschr.*, 19:725, 1906.
9. Gruber, G. B.: Zur Frage der Periarteritis Nodosa, mit besonderer Berücksichtigung der Gallenblasen- und Nieren-Beteiligung. *Virch. Arch. f. path. Anat.*, 258:441, 1925.
10. Bennett, G. A., and Levine, S. A.: Two cases of periarteritis nodosa. *Amer. Jour. Med. Sciences*, 177:853, 1929.
11. Osler's System of Medicine, 4:835, 1927.
12. Lamb, A. R. Periarteritis nodosa—A clinical and pathological review of the disease. *Arch. Int. Med.*, 14:481, 1914.
13. Fletcher, H. M.: Ueber die sogenannte Periarteritis Nodosa. *Beitr. Path. Anat.*, 11:323, 1892.
14. Dickerson, W. E. C.: Polyarteritis acuta nodosa and periarteritis nodosa. *Jour. Path. and Bact.*, 12:31, 1907.

ON THE CONSERVATIVE TREATMENT OF PLACENTA PREVIA*

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In the past few years considerable literature has accumulated dealing with the radical treatment of placenta previa; that is, treatment by cesarean section. That good results have been obtained, in many instances, has been properly attested by writers of unquestionable honesty and broad experience.

It is not the purpose of this paper to attempt to cast unfavorable reflection upon those who are sincere in their attempts to popularize cesarean section as a means of management in placenta previa, but rather to point out that in their cases, in the majority of instances, there was no actual contra-indication to the abdominal route, while in our series, in a purely charity hospital, many formidable obstacles presented themselves. It is for this reason that I am presenting a series of seventy-three consecutive cases occurring on the obstetrical service of the Herman Kiefer Hospital in the past four years and to July 1st of the current year in the attempt to show that the obstetrician need not be discouraged if radical treatment, when the patient is first seen by him, is contra-indicated. It is true that some cases presenting certain findings, when first seen, are perhaps better treated by cesarean section, than by the more conservative vaginal delivery, although there are many obstetricians, even today with the much improving material risk by the abdominal route, who prefer not to widen the indications for cesarean section to include placenta previa—except in rare instances.

Private practice with adequate prenatal supervision affords many more cases for which cesarean section can be done, than does a service like ours, which is entirely charity with its attendant group of serious emergencies, among a class of patients who often seek no medical attention until overcome by serious bleeding—before or during labor. The type of case seen in private practice on the other hand usually reports the first bloody show, and her physician is in a position to make an accurate diagnosis and institute suitable treatment while the patient is still in good condition.

So far, then, as the conditions presenting themselves at the time the patient is first seen are concerned, I think we can agree

that there *are* contra-indications for radical treatment, viz.:

1. Shock from blood loss.
2. 4 cm. or more dilatation with patient in active labor.
3. Vaginal tamponade.
4. Attempts at delivery from below.
5. Doubtful asepsis from repeated vaginal examinations.

In a large percentage of our cases one or more of these conditions existed.

With any, or any combination, of the above conditions I believe that the risk to the mother is likely to be greater with cesarean section than with delivery from below. This I also hold to be true whether the previa be marginal, lateral or central, and even in the light of the increasingly lowering maternal death rate with the low cervical section.

On the other hand there are women who can safely be delivered by section, viz.:

1. Primipara not in labor, or early in labor, with central or lateral placenta previa if seen before the bleeding is serious, or delivered *after* transfusion.

I think one could safely go farther and include multiparæ in this group with the same conditions present, provided that the operator is capable. We should always remember that there is a definite maternal risk attending cesarean section, even in the best hands and under ideal surroundings—in cases with less serious and urgent indications.

INCIDENCE

In the past four and one-half years we have had the opportunity of treating seventy-three cases of placenta previa in the obstetrical service of the Herman Kiefer Hospital. During this period 7,708 cases were delivered, giving an incidence for placenta previa of 1-105—much higher than

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Williams' estimate of 1-250 in the hospital practice and 1-1,000 for private practice. This can be accounted for by the fact that we admit a large number of emergency cases from a large city, who are seen for the first time by any physician only when in serious difficulty.

AGE AND PARITY

In the entire group there were only five primiparæ. Sixty-eight were multiparæ, having had from one to fifteen children. It is well known that the condition occurs relatively infrequently in primiparæ and that the frequency is influenced, not only by the number of children, but also by the rapidity with which the pregnancies have followed one another. W. H. Strassman finds the average age of his patient was 32.9 years and that the average number of labors was 6.38. In our series the average age was 30.2 and the average number of labors 5. Our youngest patient was seventeen, a para 1, and our oldest forty-five, a para XV. Fifteen were colored, fifty-eight white.

ETIOLOGY

Strassman emphasized that one of the most important factors in the development of placenta previa was to be found in defective vascularization of the decidua, resulting from inflammatory changes following repeated pregnancies. This, he held, limited the amount of blood to the placenta so that to obtain adequate nourishment it spread over a wider area and consequently occasionally approached the internal os.

SYMPTOMS

The symptoms of placenta previa are expressed almost entirely in terms of painless, causeless bleeding, occurring most commonly in the last trimester of pregnancy. Our cases without exception gave this as practically the only complaint—and their histories showed variation only in the number of attacks of bleeding and in the amount of blood loss. Very rarely is the initial hemorrhage in placenta previa fatal. We have grouped our cases according to blood loss on entrance to the hospital into severe, moderate and mild bleeding. As the blood pressure is the quickest available index in emergency cases, we classified as severe nineteen cases whose blood pressures were one hundred or less on entrance. Of the remaining cases, thirty-seven gave evidence

of moderate hemorrhage, and seventeen of mild bleeding.

DIAGNOSIS

Uterine hemorrhage during the last three months of pregnancy should always give rise to a suspicion of placenta previa, which should not be dismissed until a definite conclusion is reached. One other condition, viz., premature separation of the placenta, may temporarily confuse the obstetrician, but this usually only if the separation be partial. True abruptio placentæ usually offers no difficulties in differential diagnosis, as the sudden pain and collapse and the board-like consistency of the uterus are characteristic.

A few points in diagnosis may well be borne in mind, viz.: (1) location of the presenting part, which is commonly high. (2) Location of the placental souffle, which is usually found low, just above the symphysis, (3) the cervix is softer and more patulous than usual, so that little difficulty is experienced in (4) passing the finger through it and feeling the characteristic spongy placental tissue.

In many instances satisfactory diagnosis has been made by rectal examination alone. If, however, this cannot be accomplished, vaginal exploration is done which makes the diagnosis final. These examinations are never done in a case of suspected placenta previa, until all preparation for the immediate control of hemorrhage has been made. In my experience I have seen three fatal cases resulting from bleeding where this precaution had not been taken.

TREATMENT

I have previously referred to the factors influencing the choice of treatment in the given case, but wish again to emphasize the importance of individualization and the abandonment of so-called routine treatment. We have tried to choose the proper treatment for the case, rather than to attempt to make the case fit any preconceived ideas as to therapeutics.

There are, at our command, the following methods for the treatment of placenta previa:

1. Expectancy.
2. Rupture of the membranes.
3. Braxton Hicks version.
4. Insertion of dilatable bag.
5. Cesarean section.

To treat a condition so serious as placenta previa by simply waiting for spontaneous delivery may seem like courting trouble. Nevertheless, twelve cases of placenta previa marginalis were so managed with good results and no maternal deaths. In all, dilatation was well advanced on entrance and bleeding mild. All preparations having been made for immediate control of hemorrhage, if necessary, the patients were allowed to continue in labor and delivered without complication.

Rupture of the membranes alone, which was followed by spontaneous delivery, was done four times successfully.

Braxton Hicks version was done only once in this series, as in hospital practice we favor the dilatable bag as giving, probably, a lower fetal mortality. It is, however, a method to be remembered, especially by the general practitioner, in cases encountered in the home, where bleeding must be controlled promptly.

The dilatable bag for the control of hemorrhage was used in forty-one cases. Its use was followed by spontaneous delivery in thirteen instances, by version and extraction twenty-three times, and by forceps delivery two times.

Other operative measures aiming at delivery and not at control of hemorrhage were version and extraction after complete dilatation—three cases. Breech extraction—two cases. Mid forceps—one case. Low forceps—two cases.

Cesarean section was done only seven times, the Porro operation three cases, classical section two cases, the low cervical section two cases, as follows:

1. Para III. 28. 8 mos. Previous section. Entered in shock with ruptured uterus and central placenta previa. Porro cesarean section. Child still-born.

2. Para II. 26. Term. Central placenta previa, moderate bleeding, 2 cm. dilatation. Classical section.

3. Para IV. 37. 8 mos. Moderate bleeding. Central placenta previa. No dilatation. Low cervical section.

4. Para V. 35. 8 mos. Beginning labor, moderate bleeding, central placenta previa. Porro cesarean section. Child died, pulmonary atelectasis.

5. Para V. 39. Term. No dilatation, lateral placenta previa. Moderate bleeding. Classical section.

6. Para VI. 33. Term. Mild bleeding. No dilatation. Lateral placenta previa.

7. Para VI. 39. Term. Mild bleeding. No dilatation. Lateral placenta previa. Low cervical cesarean section.

It is seen, then, that of seventy-three cases of placenta previa, twelve of which were

central, twenty lateral and forty-one marginal, all but seven were treated by conservative measures. In seven instances cesarean section was done for central or lateral placenta previa in patients in good condition, with little or no dilatation, who were obstetrically clean.

To insure a happy result in the treatment of this condition, it is necessary that our treatment (1) take measures to combat the effects of the blood already lost, (2) conserve further blood loss, (3) successfully deliver the patient. No method of combating blood loss is so successful as blood transfusion. Its use in placenta previa should be as nearly routine as anything can be in the practice of medicine. Even with hemorrhage carefully controlled the repeated loss of small amounts of blood before delivery are likely to result in a fatal outcome when added to the inevitable bleeding, even though moderate, that occurs after the third stage of labor. The replacement of lost blood is literally life-saving.

It can be seen that we have favored the use of the bag for the control of bleeding (41 cases) and to obtain dilatation of the cervix. In all but four instances, the intra-ovular introduction was done. It has been claimed that the extraovular method without rupture of the membranes is fully as successful in the control of bleeding and gives a somewhat lower fetal mortality, but I have not yet convinced myself that this is true.

In the actual delivery of the patient it must be borne in mind that attempts at manual dilatation of the cervix are disastrous, and should never be attempted. Delivery should not be contemplated until the cervix is completely dilated. If evidence of fetal embarrassment is discovered before dilatation is complete, it will have to be regretfully disconsidered in the interest of the mother. Delivery should be slow and gentle to avoid injury to a cervix whose integrity is already impaired by a low lying placenta. If the bleeding is to be controlled and dilatation obtained by the use of the bag, the obstetrician should be in constant attendance. The critical period is as the bag passes through the cervix, and, if the progress is not carefully watched, serious bleeding may occur behind the bag without being visible externally. It may be well to mention that a 10 cm. bag is sufficient to obtain the necessary dilatation with a patient at term.

After inserting it through the cervix it should be filled, but not over distended, with a large syringe and sterile water; the number of syringes fully necessary to accomplish this having been previously ascertained.

Unfortunately all the difficulties attendant upon the delivery of a case of placenta previa per vagina are not always finished with the birth of the child. Postpartum hemorrhage is common and the placenta should be delivered manually if necessary, to avoid loss of time. A rapid inspection of the cervix will reveal lacerations in need of repair, and leave the obstetrician feeling more certain that a surgical pack will control any further bleeding. If the patient shows evidence of blood loss, transfusion is again emphasized as the treatment of choice and also of necessity.

MORTALITY

Maternal: The prognosis for the mother in placenta previa is always serious. In these times the maternal mortality depends largely upon the type of placenta previa encountered, the method of delivery chosen for the individual case, the use of blood transfusion, and the condition of the patient when first seen. Bill of Cleveland deserves much credit for pointing out the value of prophylactic blood transfusion, in lowering mortality rate, with 1.78 per cent in fifty-six cases so treated, compared with 11.1 per cent in forty-five cases in which this precaution had not been taken. In 1926 Pankow reported a collection of 7,234 cases from the German Clinics with a mortality of seven per cent, and Jellet from the Dublin Rotunda, a rate of 3.6 per cent in 138 cases. Hitschman in 1921 collected 6,438 cases with 6.5 per cent maternal mortality. De Lee states that from twenty different parts of the world mortalities range from 1 to 19 per cent, and that "the best results are gotten by individual accoucheurs, which proves that much depends upon personal skill."

In our series of 73 cases, there were two maternal deaths, a rate of 2.7 per cent, as follows:

Case 1. Para VIII, age 34, 7 months. History of spotting for past two months. On entrance Hb. 53%. R.B.C. 2,740,000. Dilatation 4 cm. Profuse bleeding. Direct blood transfusion, 500 c.c. Placenta previa lateralis. Bag introduced with control of hemorrhage. Satisfactory first stage pains. Two hours later patient suddenly went into a state of shock and expired undelivered. Autopsy could not be obtained. On removal of the bag there was no concealed hemorrhage or palpable cervical injury.

Case 2. Para IV. Age 30. History of bleeding at home, 2 cm. dilatation and profuse bleeding upon entrance. Placenta previa centralis. Bag introduced with control of bleeding. Saline and glucose solution—proper type of donor for blood transfusion not available. Version and extraction after complete dilatation under light ether anesthesia. Patient expired on delivery table, child in good condition. Autopsy showed a severe chronic myocarditis, probable anesthetic death.

Fetal: Fetal mortality is disturbingly high in placenta previa. This is due not only to the seriousness of a condition which interferes with the circulation of the child, but to the frequency of prematurity. Prolapse of the cord also has a high incidence, tending to increase the infant mortality rate.

De Lee finds mortality rates ranging from ten to eighty per cent. Kustner thirty-five per cent, Bürger and Graf fifty-five per cent, Hetschman forty per cent and Strassman sixty-one per cent.

Seventy-four babies are to be considered in our series; of these, thirty-eight lived and thirty-six died, a gross rate of 48.6 per cent. Of those that died, twenty were premature, of which thirteen were nonviable. Five feti were dead on entrance and showed evidence of maceration. One fetus was a monstrosity. In all there were five cases of prolapsed cord. If nonviable prematures, macerated feti and the monstrosity are deducted, seventeen cases are to be considered, *i.e.*, net rate of 22.9 per cent.

This universally high fetal death rate has been used as an argument for the more radical treatment of placenta previa by cesarean section, with the idea that more children will be born alive. While this sounds reasonable, it must be remembered that a large percentage of the babies are premature, who even if born alive have a poor chance for surviving, and to subject the mother to added risk for the sake of a problematical child does not seem to be good judgment.

SUMMARY

Seventy-three cases of placenta previa are reported, twelve central, twenty lateral and forty-one marginal, of which sixty-six were treated by so-called conservative methods, and seven by cesarean section. The chief symptom complained of in all instances was bleeding, which was mild in seventeen instances, moderate in thirty-seven and severe in nineteen. The average age was 30.2 years, the average number of children five. Forty-one cases were treated by the use of dilatable bag, twelve by watchful expect-

tancy, four by artificial rupture of the membranes only, one by Braxton Hicks' version, and eight by methods aimed at delivery only. There were two maternal deaths, 2.7 per cent. Thirty-six babies did not survive, a gross death rate of 48.6 per cent. Deducting nonviable prematures, macerated feti and monstrosities, the net fetal death rate is 22.9 per cent.

CONCLUSIONS

1. Satisfactory results can be obtained by conservative treatment in placenta previa.

2. The choice of radical treatment by cesarean section should depend largely upon the condition of the patient when first seen. Patients in poor condition, or well advanced in labor, or not obstetrically clean, are not satisfactory risks for abdominal surgery.

3. Blood transfusion will at times reduce the surgical risk and make section comparatively safe.

4. The maternal death rate seems to be in indirect proportion to the frequency of blood transfusion.

5. Rapid manual dilatation of the cervix and hasty delivery are condemned as disastrous.

6. A high infant mortality is found universally—the result of prematurity, interference with fetal circulation and birth trauma.

7. It is questionable that this can be much reduced by the more frequent employment of cesarean section, except in cases at or near term, by the avoidance of operative delivery trauma.

8. Cases of placenta previa should be hospitalized.

Note: Acknowledgment is made to Dr. Warren Lambert, Assistant Obstetrical Resident, at the Herman Kiefer Hospital, for much valuable assistance with case records that makes this paper possible.

THE PRESENT STATUS OF ENDOCRINE DIAGNOSIS

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The term "endocrinologist" is a poor appellation for those members of the medical profession interested in endocrinology. This branch of medicine should awaken the interest of the entire profession, even those physicians engaged in the specialized branches. The haze of skepticism which has enshrouded it for so many years is being rapidly lifted. The honest-minded physician now can direct his attention toward this field without fear of criticism because today it is being rapidly placed upon a firm experimental basis. This newer basic knowledge is in no way due to the efforts of the medical profession but rather to the work done by our allied scientists—the biologists, the physiologists, the biochemists, and the anatomists. A great number of articles appearing in their journals are devoted exclusively to experimental endocrinology. For their efforts in experimentation the medical profession is greatly indebted, and it can repay this debt only by clinical application of their results where possible. *It is earnestly hoped that endocrinology will soon attain its rightful place in the curriculum of the medical school, and be taught together with anatomy, physiology, and pathology.*

Heretofore clinical endocrinology was largely a matter of individual theory with but a modicum of fact. Because of this the entire subject was poorly accepted. The competent research workers must be given a major credit for having placed endocrinol-

ogy upon a fairly exact cytologic and biologic basis. Prominent examples of their work include the development of the following therapeutic glandular products: (1) adrenalin, an extract of the medullary portion of the suprarenal gland; (2) pituitrin, now divided into pitocin, the oxytocic fraction, and pitressin, the pressor fraction, derived from the posterior lobe of the hypophysis; (3) thyroxin, the true hormone of the thyroid gland; (4) insulin, a glyco-genic hormone derived from the pancreas; (5) theelin, a true ovarian hormone derived from the ovarian follicle; (6) suprarenal cortex extract, a specific hormone derived from the cortex of the suprarenal gland; (7) the pituitary sex and growth hormone derived from the anterior lobe of the pitui-

tary gland. There are a number of others as yet not so well established.

These advances that have been made in a period of less than two decades indicate a branch of medical knowledge with a vista so broad and illuminating that its present day status represents only a partially complete understanding of its many underlying principles. With a more comprehensive appreciation of these principles it may well dominate the medical progress of the next decade and parallel the strides made in infectious disease control from 1890 to 1900.

Proper clinical evaluation and therapeutic application must necessarily come from the clinician. Without a basic knowledge of functions and interrelationships of the endocrine system, the clinician is in no position to interpret properly an abnormal function or to recognize this disturbance of function when presented in a patient.

Instances of specific therapy are still extremely rare in the general field of medicine but should not prove so in this new field. Therapy, to be specific, necessarily presupposes a specific diagnosis. Contrary to a commonly accepted belief, endocrine diagnoses are not fanciful but are based upon truly scientific clinical criteria. The ordinary means employed include history, physical examination and laboratory methods. A complete medical survey, moreover, must include all data with reference to *nonendocrine* disease as well as endocrine disorder. This is necessary in order to first *exclude all nonendocrine diseases* as a possible cause for the symptomatology. Before such nonendocrine causes are excluded, an endocrinopathy can not be contemplated. When they are positively excluded, it is necessary to note normal standards of endocrine balance. It is the deviations from normal that provide the basis for a diagnosis of endocrine disorder. The correlation of history, physical and laboratory examinations, hormonal signs and the course of endocrine disorders are included concomitantly with the routine observations made for nonendocrine disease.

Endocrine symptomatology relates specifically to disturbances in function and development with recognizable signs differing from those of nonendocrine disease. The clinician must, therefore, undertake additional clinical investigations to those ordinarily made for infectious, blood or neoplastic disease. The most important hormonal signs are determined from accurate

measurements and roentgen examination of epiphyses to interpret the physical development. Intelligence tests afford an approximation of mental development, especially in children.

Other routine hormonal determinations are basal metabolism, blood chemistry (blood sugar, calcium, nitrogen, phosphorus, and urea), and also specific reactions of hormones extracted from the blood or urine of the patient. Also, the gross and cytological reactions produced after injections in certain organs are observed, such as those of the ovarian follicle from the pituitary-like sex hormone (Ascheim-Zondek test), and the hypertrophy of the atrophic accessory genitalia in castrated animals, produced by injection of the male testicular hormone. These tests for glandular function should soon have the same diagnostic significance as the Widal Wassermann reactions for typhoid and syphilis, when hormone contents of blood and urinalyses are made clinically available.

In order to identify endocrine disorders, it is further necessary to include additional information regarding the etiology and course of the disorder as compared with the ordinary history that is almost entirely limited to infectious, hemopoietic, and tumefactive causation. The physical and laboratory examinations must embrace the possible hormonal signs and reactions as well as those routinely described and obtained.

HISTORY

The most important etiologic factors are those referring to heredity and those clinical familial expressions which exhibit themselves as abnormal growth, development, and function of the body as a whole. Consequently, much more attention must be given to the family history than an inquiry of the ordinary infectious and systemic diseases. Endocrinopathies of the family must be determined on account of the direct as well as the indirect transmission of the endocrinopathies. The history of these disorders can be obtained by asking the patient simple questions understood by the layman. Among these are the presence of undergrowth or overgrowth in the family, evidence of obesity, goiter, diabetes, dermal pigmentation, and hairgrowths. Among the common disorders that are directly transmitted are the thyroidisms and pituitarisms. Careful inquiry into family history usually

discloses that there was some type of these disorders present in the parent, frequently in the mother.

Credibility that hereditary transmission is possible is suggested by experimental work in animals. Dr. Oscar Riddle of the Carnegie Institute, Cold Spring Harbor, New York, has succeeded in raising three lines of birds which all show a different level of thyroid function as proved by basal metabolic rates. The thyroid level of each succeeding progeny can be predicted before the hatching of these birds. Dr. Philip Smith, Columbia University, New York, has been able to rear a colony of hypopituitary rats. These rats in all their succeeding generations show evidence of pituitary failure, such as uniform undergrowth. Marine reports an experiment with a female dog having goiter. This dog first had a litter of puppies nearly all of whom had goiters. She was then given treatment for her goiter, which was continued through her second pregnancy. In the second litter of puppies, there was a complete absence of goiter.

These animal experiments prove the necessity for obtaining a careful *prenatal* endocrine history as well as family history. For instance, history should be solicited of the patient regarding a lack of endocrine response during pregnancy. Such response evidences itself in a gain of weight of less than fifteen or more than twenty-five pounds, ruling out, of course, increased food intake, and of a failure to return to normal form and weight after lactation. Signs of the lack of thyroid response to gravidity are those of mild myxedema, alabaster color, thickness and dryness of the skin, puffiness about the dorsum of the hands and fingers, supraclavicular region and face, somnolence, albuminuria, subnormal temperature and slow pulse, and *diminished basal metabolic rate*. Here the careful authoritative work of Rowe¹ should be consulted. Signs of lack of pituitary response to gravidity are osteophytic changes about the joints, unusual chloasma and pigmentations, tendency to blunting of the peak bones, coarseness of the facial features, and an unusual gain in weight. Toxemias of pregnancy still must be classified as a syndrome and treated individually, but the work of Cushing and others suggests that eclampsias with hypertension might possibly be due to a disturbance in function of the basophilic cell of the pituitary gland. The hypothyroidisms of

pregnancy can and occasionally do assume the characteristics of a true toxemia and can be corrected with proper thyroid medication.

The *present* history of the patient should begin at birth and include data relative to the physical and mental development during infancy and juvenility. This information is obtained from the weight and length at birth, the time of dentition, walking, and talking, and reaction to food intake. Gastrointestinal upsets during the first and second years may arouse suspicions of endocrine disorder. History of the mental and physical development during juvenility is solicited by comparing the physical size and development of the patient with individuals of similar age and sex. Mental development is easily obtained from the progress through school.

Of most importance referable to endocrine imbalance is the history at the age of puberty, at which time many unsuspected latent disorders are activated. The time of the onset of secondary sex characteristics, including the menstrual history, may indicate a probable endocrine disorder present at that time; but it may be one that had its beginning during juvenility or even during infancy. Accepting thirteen years as the optimal, and twelve to fourteen years as the normal variation, for the onset of menses, deviation from this time indicates glandular disorder if all nonendocrine disease factors have been excluded. A few examples of menstrual abnormality are the early onset of menses before the age of twelve in hyperthyroidism and hypergenitalism or after fifteen in hypothyroidism, hypogonadism, and hypopituitarism. In hypopituitarism there is usually an early onset of periods of from ten to twelve years followed after a few years by marked irregularity in which there are intermenstrual intervals of three to four months. Other menstrual abnormalities, such as metrorrhagia, menorrhagia, and dysmenorrhea, are related to various types of endocrine disorders. Another sexual period, the history of which is related to the endocrinopathies, is that of the menopause. An early menopause usually indicates a pituitarism; whereas a prolongation of menstruation suggests a hypothyroidism. Both puberty and the climacteric are associated with the classical forms of goiters, that of adolescence with colloid goiter; whereas the

most frequent type of the menopause is the exophthalmic or toxic nodular goiter.

PHYSICAL EXAMINATION

A complete physical examination must be made for all the nonendocrine organs and systems to which are recorded those hormonal signs indicating abnormal endocrine function. The *general* physical examination should include sufficient endocrine data from which to draw conclusions regarding the type of the individual examined. The five most common types are those due to thyroid, pituitary, hypogonad, hypergenital, and adiposogenital disorder. The important signs indicating thyroidism refer largely to the nervous reaction and to changes in the thyroid gland itself. Hypothyroidisms have various grades of mental retardation; whereas the hyperthyroidisms have various stages of excitation as evidenced by their apprehensions, fears, tremor, and tachycardias. The presence or absence of a large thyroid should be noted in the general examination as well as the regional examination of the neck, at which point it is described more in detail. The pituitary and hypogonadal types are estimated largely by classical statural deviations. In the pituitary and early hypergenital types the upper measurement, from the symphysis to the vertex of the skull, is longer than the lower measurement, from the symphysis to the soles of the feet, and the height usually exceeds the span. The opposite of these measurements, the lower measurement being longer than the upper, and the span longer than the height, is present in the hypogonad type. The fourth, more infrequent, is that of hypergenitalism. Its two outspoken general signs are hypertrichosis associated with hypertrophy of the external genitalia. A fifth common type is that of adiposogenital pituitarism (Fröhlich's syndrome). Its characteristic sign is marked obesity, particularly of the girdle type, and it is associated with hypoplasia of the external genitalia. Although an individual may quite apparently be one of these types, it does not mean that he is suffering at that time from an endocrine imbalance. It may only indicate the influence of these various glands before completion of his maturity and growth.

Careful observations including accurate *measurements* of height, weight, upper and lower proportions and circumference measurements of the head, chest, and abdomen

should be made as a matter of routine. Measurements are especially valuable during the infantile and juvenile periods, for one-third to one-half of the total structural growth is completed before the third year. The appended chart allows a necessary variation between the minimal and maximal measurements for the age indicated. Should there be a marked deviation from these minimal and maximal measurements as shown in the chart, and if all nonendocrine diseases are positively excluded, we can reasonably make a diagnosis of pituitarism; or, if roentgen studies of the development of the osseous centers show retardation, a diagnosis of hypothyroidism may be made. Achondroplasia, which may simulate either a hypopituitarism or hypothyroidism, must be ruled out by x-ray and serology.

Description of both generalized and localized *adiposity* should be given in detail. *Hairgrowth* and various other characteristic signs of the skin, such as *pigmentation*, thickness, dryness, and elasticity, should be recorded. Comparative estimations of the head, feet, and extremities with those of the body are included in the general examination. In addition to these hormonal signs of endocrine disorder are the routine findings such as station, gait, color, respiration, temperature, pulse rate, and mental reaction during the examination, together with abnormal signs such as cyanosis, dyspnea, and edema.

REGIONAL EXAMINATION

In the regional examination detailed examination is made of the various parts of the body from the head to the extremities in the routine way. During this examination, localized endocrine signs are described in detail with those of nonendocrine disease symptoms that may be present. Under the head, for example, the size, shape, and form are noted, and also the position of the ears and placement of features. Under the *eye*, the character of eyebrows and lashes, exophthalmos, and enophthalmos, and thyroid signs such as Dalrymple's, Von Graefe's, Stillwagen, et cetera, are noted. Under the description of the *nose*, a retroussé nose is frequently found with congenital hypothyroidism. This, of course, must be differentiated from a saddling of the nose due to destruction of the septum in syphilis. Under the *mouth*, detailed description of the orthodontal markings indicating various

glandular disorders is made. Under the regional examination of the *neck*, any abnormality of the thyroid is described in detail. Such similar harmonic signs of endocrine

LABORATORY

The examinations made in the laboratory consist of the ordinary routine procedures including urine, blood, feces, sputum,

NORMAL MEASUREMENTS in relation to AGE

I.

AGE	Height (inches)				Weight (pounds)				Span (inches)				Upper Measurement (inches)				Lower Measurement (inches)				Circumference Measurements (inches)					
	W		M		W		M		W		M		W		M		W		M		H		Chest		Waist	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
Birth	19.3	21.1	19.0	20.9	6.2	8.9	6.4	8.6	19.1	20.1	19.1	19.9	12.1	13.1	12.1	13.1	6.9	7.9	6.9	7.9	13.9	15.6	13.9	15.6	13.4	15.2
1 Mo.	20.0	22.9	20.6	22.6	9.0	11.9	9.4	11.0	20.1	22.1	20.2	19.8	21.5	13.3	14.3	13.0	14.0	7.7	8.7	7.6	8.6	16.2	14.9	14.3	14.1	15.9
2 Mos.	22.1	24.1	21.7	23.7	10.4	13.6	9.9	12.6	21.0	23.0	20.4	20.4	22.4	13.9	14.9	13.6	14.6	9.1	9.1	7.9	8.9	16.0	15.7	15.6	15.3	15.8
3 "	23.1	25.1	22.7	24.7	11.9	15.3	11.2	14.8	22.0	24.0	21.4	23.4	14.6	15.6	14.1	15.1	8.6	9.6	8.4	9.4	16.6	16.3	16.4	16.0	18.0	
4 "	24.0	26.0	23.6	25.6	13.2	16.9	12.4	16.8	22.9	26.1	22.3	24.3	15.0	18.0	14.7	16.7	9.0	10.0	8.9	9.9	17.0	16.7	16.9	16.5	16.6	
6 "	24.7	26.7	24.3	26.3	13.9	17.7	13.7	17.3	23.3	25.6	23.3	25.3	15.3	16.3	15.2	16.2	9.2	10.2	9.3	10.3	17.4	17.1	17.2	16.9	16.8	
6 "	25.4	27.4	25.0	27.0	16.2	19.4	14.3	19.1	24.3	26.5	23.9	25.9	16.9	16.9	15.5	16.5	9.6	10.6	9.6	10.6	17.7	17.3	17.6	17.0	17.1	
7 "	26.1	28.1	25.6	27.6	15.9	20.1	14.9	19.9	24.9	27.0	24.3	26.3	16.1	17.1	16.9	16.9	9.9	10.9	9.7	10.7	17.9	17.5	17.7	17.2	17.3	
8 "	26.6	28.6	26.1	28.1	16.5	20.9	15.6	19.8	25.3	27.5	24.9	26.9	16.3	17.6	16.0	17.0	10.0	11.2	10.0	11.0	18.1	17.7	17.9	17.4	17.5	
9 "	27.1	29.1	26.6	28.6	17.1	21.7	16.1	20.3	25.9	28.0	26.2	27.2	16.5	17.7	16.3	17.3	10.3	11.6	10.2	11.2	18.2	17.8	18.0	17.6	17.6	
10 "	27.6	29.6	27.1	29.1	17.6	22.4	16.6	21.0	26.2	28.4	25.7	27.7	16.9	18.0	16.4	17.6	10.6	11.7	10.4	11.6	18.4	19.0	18.2	17.9	17.7	
11 "	28.1	30.1	27.6	29.6	18.3	23.1	17.3	21.7	26.7	28.9	26.1	28.3	17.0	18.2	16.7	17.9	10.8	12.0	10.6	11.8	18.6	19.1	18.3	17.9	17.8	
12 "	28.4	30.6	28.0	30.0	19.9	23.9	17.8	22.4	27.2	29.4	26.6	29.9	17.3	18.6	16.9	19.1	11.0	12.2	10.9	12.1	19.0	19.6	18.6	19.1	17.9	
15 "	29.6	31.6	29.1	31.1	20.1	25.3	18.9	23.7	29.2	30.4	27.6	29.8	17.9	19.0	17.4	19.6	11.6	12.7	11.4	12.6	18.9	19.6	19.9	19.4	19.2	
19 "	30.9	33.0	30.3	32.3	21.9	27.3	20.9	25.9	29.6	32.0	29.0	31.2	19.6	19.9	18.1	19.3	12.2	13.4	12.2	13.4	19.1	19.7	19.1	19.7	19.6	
21 "	31.7	34.1	31.3	33.6	23.1	28.7	21.7	27.1	30.6	33.0	29.9	32.3	18.9	20.3	18.6	19.9	12.7	14.1	12.7	13.9	19.3	19.9	19.4	19.0	19.7	
24 Mos.	32.7	35.1	32.2	34.6	24.3	30.1	22.9	28.5	31.5	33.9	30.9	33.3	19.4	20.8	18.9	20.3	13.2	14.6	13.2	14.6	19.4	19.0	19.7	19.2	18.9	
30 "	34.5	36.9	33.9	36.3	26.1	32.3	24.9	30.7	32.9	35.6	32.4	34.9	20.0	21.4	19.6	21.0	14.1	15.6	14.0	15.4	19.6	19.2	20.2	19.6	19.2	
36 "	36.0	39.6	35.4	39.0	28.7	35.3	26.6	33.0	34.8	37.6	33.9	36.4	20.7	22.3	20.0	21.6	15.2	16.9	14.9	16.5	19.9	19.4	20.6	20.0	19.5	
42 "	37.4	40.2	36.9	39.5	30.5	37.5	28.6	35.2	36.3	39.1	35.2	39.0	21.3	22.9	20.6	22.2	16.1	17.7	15.8	17.4	20.0	19.6	21.0	20.4	19.8	
48 "	38.6	41.6	39.3	40.9	31.6	39.2	30.5	37.3	37.3	40.3	36.7	39.5	21.6	23.2	21.2	22.8	16.8	18.4	16.7	19.3	20.1	19.7	21.4	20.7	20.0	
54 "	40.1	42.9	39.8	42.3	33.8	41.6	32.5	39.9	39.9	41.8	38.2	41.2	22.0	23.9	21.5	23.3	17.7	19.6	17.7	19.6	20.3	19.9	21.7	21.0	20.2	
60 "	41.2	44.2	40.7	43.7	35.1	43.5	33.8	41.6	39.6	43.0	39.2	42.2	22.4	24.2	21.9	23.7	18.3	20.1	19.3	20.1	20.4	20.0	22.1	21.4	20.4	
5½ Yrs.	42.4	45.4	41.9	44.9	37.4	46.4	35.9	44.5	41.3	44.5	40.7	43.9	22.7	24.7	22.4	24.2	19.3	21.3	19.3	21.1	20.4	20.1	22.4	21.7	20.6	
6 "	43.6	46.5	43.1	46.1	39.2	48.6	37.5	46.5	42.8	45.6	41.7	44.9	23.0	25.0	22.6	24.6	20.0	22.0	19.9	21.9	20.5	20.1	22.7	22.0	20.9	
6½ "	44.5	47.7	44.2	47.2	41.0	50.8	39.2	48.6	43.4	46.8	42.8	46.0	23.3	25.3	23.0	25.0	20.7	22.7	20.5	22.5	20.5	20.2	23.0	22.3	21.1	
7 "	45.6	49.6	45.2	48.4	43.0	53.2	42.1	52.3	44.5	47.9	44.3	47.7	23.6	25.7	23.4	25.4	21.3	23.5	21.6	23.6	20.6	20.3	23.3	22.7	21.3	
7½ "	46.6	49.8	46.3	49.5	45.0	55.9	44.1	54.9	45.8	49.1	45.4	48.8	23.8	26.0	23.7	25.9	22.0	24.2	22.1	24.3	20.7	20.3	23.7	23.0	21.6	
8 "	47.5	50.9	47.2	50.6	47.2	58.4	46.4	57.0	46.8	50.4	46.6	49.9	24.1	26.3	24.0	26.2	22.7	24.9	22.8	25.0	20.7	20.4	24.0	23.4	21.8	
8½ "	48.5	51.9	48.2	51.6	49.3	61.3	48.6	60.6	48.0	51.6	47.6	51.1	24.6	26.7	24.4	26.6	23.3	25.5	23.4	25.8	20.8	20.8	24.3	23.9	22.0	
9 "	49.5	52.9	49.2	52.6	51.6	64.4	51.0	63.9	49.9	54.6	52.2	54.7	27.1	24.7	26.9	23.9	26.3	24.1	26.3	20.9	20.6	24.6	24.2	22.9	21.2	
9½ "	50.4	54.0	50.1	53.7	54.2	67.6	53.6	67.2	50.3	54.1	49.6	53.4	25.1	27.6	26.0	27.4	24.6	26.9	24.6	27.0	20.9	20.6	25.0	24.6	22.6	
10 "	51.4	55.0	51.2	54.8	57.0	71.6	56.2	71.0	51.4	55.4	50.7	54.6	25.5	27.9	25.6	27.9	25.1	27.6	25.1	27.8	21.0	20.7	25.3	25.0	22.8	
10½ "	52.4	56.0	52.3	55.9	59.9	75.5	59.3	76.1	52.5	56.5	51.7	56.7	25.7	29.3	25.8	28.4	26.7	29.3	25.6	29.2	21.0	20.9	26.7	26.5	23.0	
11 "	53.3	57.1	53.4	57.2	63.0	79.4	63.7	81.1	53.5	57.7	53.3	57.3	26.1	28.7	26.6	29.1	28.3	29.9	26.4	29.0	21.1	20.9	28.1	26.1	23.8	
11½ "	54.3	59.1	54.6	58.4	66.2	83.2	66.9	85.6	54.6	58.8	54.2	58.4	26.6	29.1	26.9	29.6	28.9	29.6	27.0	29.6	21.2	20.9	26.6	26.6	23.6	
12 "	55.2	59.0	55.6	59.6	69.4	87.2	70.7	90.5	56.8	60.0	55.4	59.8	27.0	29.6	27.4	30.0	27.4	30.0	27.6	30.1	21.2	21.0	27.0	27.1	23.9	
12½ "	56.0	60.0	56.7	60.7	72.7	91.3	74.6	96.7	58.9	61.3	56.4	60.6	27.3	30.1	27.7	30.6	27.9	30.7	28.0	30.9	21.3	21.1	27.6	27.6	24.8	
13 "	56.9	60.9	57.7	61.7	76.9	96.7	78.7	101.3	59.0	62.4	57.6	61.8	27.7	30.6	28.2	31.0	28.6	31.3	29.6	31.3	21.4	21.2	28.0	28.1	24.6	
13½ "	57.8	61.8	58.5	62.7	79.3	100.3	83.6	107.8	59.0	63.6	58.6	63.0	28.2	31.0	28.6	31.8	29.0	31.9	29.9	31.8	21.5	21.3	28.3	28.6	25.0	
14 "	58.6	62.8	59.3	63.5	81.1	102.9	89.3	113.6	59.6	64.2	59.1	63.6	29.4	31.2	29.2	32.0	29.3	32.1	29.8	32.3	21.6	21.4	29.1	28.8	25.4	
14½ "	59.5	63.7	59.9	64.1	85.0	106.0	92.4	116.6	60.7	65.3	60.2	64.6	28.8	31.0	29.5	32.3	29.7	32.7	29.7	32.5	21.7	21.6	29.7	29.3	26.9	
15 "	60.3	64.5	60.4	64.6	89.4	113.4	96.7	119.7	61.7	66.6	60.7	65.3	29.3	32.3	29.9	32.6	30.2	33.2	29.9	32.7	21.8	21.6	30.3	29.6	26.4	
15½ "	61.1	65.3	60.8	65.0	91.6	116.2	99.0	122.8	62.8	67.1	61.3	66.9	29.6	32.6	30.1	32.9	30.6	33.3	30.1	32.9	21.9	21.7	31.0	29.9	26.8	
16 "	61.9	66.2	61.1	65.3	96.0	122.0	99.0	122.8	63.4	68.2	61.3	65.9	30.0	33.0	30.1	32.9	31.0	34.0	30.1	32.9	22.0	21.7	31.7	30.1	27.2	
16½ "	62.5	66.9	61.4	65.6	96.4	125.0	102.5	126.9	63.9	68.9	61.9	66.6	30.3	33.3	30.4	33.2	31.2	34.2	30.3	33.1	22.1	21.8	32.8	30.3	27.5	
17 "	63.2	67.6	61.8	65.9	108.8	131.6	102.5	128.9	65.0	70.0	61.9	66.6	30.7	33.7	30.4	33.2	31.9	34.8	30.3	33.1	22.2	21.8	32.9	30.6	27.8	
17½ "	63.8	68.2	61.9	66.0	106.8	133.2	106.1	128.9	65.6	70.6	62.5	67.1	31.0	34.0	30.7	33.5	32.0									

endocrine reactions, (3) blood chemistry, (4) autonomic nervous reactions, (5) allergic reactions, (6) roentgenographic findings, and (7) electrocardiograms. In

tests. So far, these specific therapeutic reactions for diagnosis have proved of little or no value, but it is hoped that with the elaboration of absolute specific substances or



Fig. 1. A, showing closure of epiphyses and phalanges at six years of age, which normally does not occur until sixteen, with marked advancement of development in the carpal bones. B, showing normal development of epiphyses and carpal bones at the age of six years. C, showing marked retardation in development of carpal bones and absence of the terminal epiphysis of the ulna at the age of six years. D, showing delay in epiphyseal closure. Nonunion of the epiphyses of the metacarpals, which should fuse at the fifteenth year. Nonunion of the epiphyses of the radius and ulna, which should normally fuse between the ages of seventeen and eighteen years.

individual cases, where especially indicated, some of the following special examinations are made: capillary microscopy; ear, nose, and throat examinations; ocular examination; and cystoscopic, neuropsychic and sensory examinations.

Of the routine examinations, the basal metabolic and the roentgenographic are the most important. It must be emphasized, however, that abnormality of the basal metabolic rate does not indicate thyroid disorder except when all other positive causes for basal metabolic changes can be excluded. For instance, infectious diseases, leukemias, pernicious anemia, and suprarenal cortex tumor frequently cause a marked elevation or decrease of basal metabolic rate beyond its normal prediction. Basal metabolism is not markedly altered by pituitarism, gonadism, thymus enlargement, or status thymicolymphaticus unless they have associated thyroid involvement.

The endocrine reactions are divided into general and focal. The general reactions are the effects produced by injections of the various specific substances such as adrenalin, pituitrin, thyroxin, anterior lobe extracts, and gonadal extracts upon the blood pressure, pulse, and general condition of the individual. The focal reactions are limited to regional reactions, in the neighborhood of the gland, produced by an injection of its hormone. An example of this would be the production or relief of headache by the injection of the hormones from the anterior lobe of the pituitary gland. In other words, these are similar to so-called therapeutic

hormones, they can be better utilized.

Blood chemistry includes the routine tests of nonprotein nitrogen, uric acid, creatinin, calcium, phosphorus, and sugar. Comparison of these with their normal variations may indicate an abnormal activity of some of the endocrine glands. The autonomic nervous reactions are those produced by the injection of pilocarpin, atropin, nicotin, histamin, eserine, and curare, upon the sympathetic and parasympathetic divisions of the autonomic nervous system. These tests have been of very little diagnostic value. The allergic tests are the ordinary intradermal tests made for sensitization. These, too, are of very little value in the diagnosis of endocrine disorders.

The *roentgenologic* determinations apply particularly to thyroidism and gonadism. Those applying to thyroidism are directed towards the time of appearance of the epiphyseal centers, and those applying to gonadism are directed towards the union of the epiphyses. In hypothyroidism there is a delay, and in hyperthyroidism and hypergenitalism an advance, of the appearance and development of the epiphyses. In hypogenitalism there is a marked delay of the union and in hypergenitalism a very early closure of the epiphyses of the long bones. Consequently, in the younger ages, at a time when it is difficult to obtain or interpret basal metabolic rates, roentgen examinations of epiphyses are of much more accurate service in estimating thyroid function. In fact, by this means hypothyroidism and cretinism can be diagnosed at birth by x-ray

of the knee and ankle and noting the centers of ossification which should be normally present at that time in these joints. In addition to making these routine roentgenograms, those of the sella and thymus are usually included. In special cases roentgenograms of the gastro-intestinal tract, gallbladder, kidneys, and pelvis are made as indicated. Suprarenal cortex disorder should have pyelograms made to indicate an encroachment on the kidney by a tumor from above. Roentgenograms of the pneumoperitoneum should be taken to determine a growth extending into the abdominal cavity from the cortex of the suprarenal gland. X-ray of the kidney area may reveal calcium deposit shadows of the suprarenal.

Electrocardiographic examination is made routinely, particularly in those cases having cardiac arrhythmias. The tachycardias, flutters, and fibrillations due to thyroidism are frequently modified by the injection of a small dose of thyroxin, as shown on the electrocardiogram. Capillary microscopy frequently demonstrates a marked variability of the capillaries in the nails and skin in those disorders affecting the autonomic nervous system. In pituitary tumor as well as other intracranial lesions, special ocular examinations should be included. By means of perimeter charts the course of pituitary tumor with regard to its progress or cessation can often be demonstrated. Ordinary

neuropsychical examinations are made routinely, and, in cases having marked mental, psychic, or behavioristic symptoms, special examinations should be made by a competent psychiatrist.

While the foregoing material presents many positive signs of endocrine abnormality in the patient, it does not necessarily follow that one or more such findings are sufficient to constitute a diagnosis of specific endocrinopathy. Here, too, just as in organic and infectious diseases, one can arrive at a proper diagnosis only when all findings are collected and properly correlated, and each observation interpreted in terms of all other observations. With this in mind, a specific diagnosis of endocrine imbalance can be made and very often specific therapy can be instituted.

The clinical side of endocrinology will doubtless change very rapidly within the next few years as new facts are added to the present fund of knowledge on the subject. Based upon facts now known and their practical and successful application, clinical endocrinology is rapidly becoming established upon such a firm basis that it should soon be recognized as one of the more important branches of medical practice.

BIBLIOGRAPHY

1. Rowe, Allan Winter, and Boyd, William Clouser: *Journal of Nutrition*, November, 1932, Vol. V, No. 6.

NOCTURNAL ENURESIS

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A review of the literature concerning bedwetting reveals a widespread difference of opinion among medical writers as to the causes. For the most part the older writers stressed the importance of the role of pathology of the genito-urinary tract. Phimosis, urethritis, cystitis, deformities of the bladder, pyelitis and nephritis are among the more common causes enumerated. Later, emphasis was laid upon disturbances of the peripheral nerve supply, such as caused by myelodysplasia or incomplete development of the lower segments of the spinal cord. Several writers have reported as high as 35 per cent of enuretics with occult spina bifida. Atonic sphincters and the so-called "irritable bladder" are frequently mentioned. Still later the trend was toward psychic or neurotic factors. The association with dreams was widely discussed. With the development

of the mental hygiene movement, a different viewpoint came into popularity. Hamill,¹ who is regarded as an authority on this subject, stated in 1929 that enuresis is a conduct disorder and may be discontinued when the child so desires. Feer² recently in a German publication classified enuretics in two groups: first, the careless type; and, second, the neuropathic type.

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The subject of enuresis has been studied intensively in institutions, as they afford better conditions for observation and treatment than are available in private practice. Wodak³ in 1918 stated that in a German feeble-minded school 41 per cent of the children were enuretic. A search through the reports of children's institutions in the United States reveals only one reference to this subject. The Children's Village, at Dobbs Ferry-on-Hudson, New York, generally regarded in the front rank of institutions for children in this country, states in its Annual Report for 1931 that "15 per cent of its population was enuretic," before adopting some of the methods described in this paper. In a verbal communication to Dr. Robert H. Haskell, Medical Superintendent of the Wayne County Training School, Mr. Leonard W. Mayo,⁴ Assistant Director of the Children's Village, stated that Dr. Marion Kenworthy declared that practically every institutionalized child is a potential enuretic. The explanation is that the child feels that he has been deprived of the normal home contact to which he is entitled and he harbors a spirit of resentment towards the institution which prevents him from enjoying this privilege. He therefore proceeds to salve his irritation by literally "peeing" on the institution. Statements of a high percentage of enuretics and an almost uniform inability to cope with this problem have been expressed to us by officials of several institutions, both for mentally normal and retarded children.

In the Wayne County Training School we have failed to observe enuresis occurring as a result of "spite" or resentment toward the institution. None of our severe cases has been behavior problems of the mildest degree. Our records show little if any seasonal variation. There are twice as many wet beds proportionately among the boys than the girls. Only one case, a 15 year old boy, showed demonstrable genito-urinary pathology, a marked hypospadias. We have at times observed an amusing, but nevertheless definite, increase in the number of wet beds during the night following some such excitement as a party, athletic game, or an all day Fourth of July celebration.

Enuresis is a problem of major importance to the pediatrician. It is probably present at some time or other in the majority of homes in which there are children, and is a source of inestimable worry and

inconvenience to many parents. This paper is intended to give the practicing pediatrician, who does not have a large group of children under such constant supervision, the results of our observation on this subject.

The Wayne County Training School is a relatively new institution for high grade morons or borderline types of mentally defective children. Fourteen hundred children have been admitted since it was opened in 1926. Their ages range roughly from 6 to 20 years with an average age of 15. The average age at the time of admission is approximately 12 years, while the average I.Q. of the group is about 65.

This study began December 1, 1929. There had been, up to that time, 60 recorded enuretics among the 781 previous admissions. No special efforts had been made to guarantee that all the earlier enuretics were recorded. Since that time 83 additional enuretics have been admitted among a total of 579 children, giving a total of 143 known enuretics, or 10.5 per cent of the population, who have been under treatment. Their average age is 12 years. These children, during their entire residence in the Training School, are subject to a richly developed, modern medical regime. We were not satisfied with the progress being made in curtailing nocturnal enuresis and so in December, 1929, took steps which led to the beginning of the development of our present program.

Various methods of treatment were used unsuccessfully at the beginning of this study. Medical therapy, with one exception, which will be discussed later, proved ineffective. Atropine, in full doses, frequently recommended for the treatment of this condition, produced no change in continence in the five children on which it was used. Other drugs which proved ineffective were various endocrine products, particularly thyroid and pituitary extract, strychnine, and hexamethylamine.

Another method of treatment resorted to was the attempt to train the urinary sphincter muscles by means of exercises designed to increase their tonus. The child was directed to "stop" and "start" several times during each act of urination. This system was religiously tried on a group of six children for one month with no demonstrable improvement in any of them. Furthermore the children soon became extremely bored

with this procedure, after the initial novelty had worn off.

Such methods as attempts to restrict the intake of fluids in the later afternoon, the keeping of charts, which recorded dry beds by means of various colored stars, a system of rewards, and the repetition of such stilted phrases at bedtime as "I won't wet my bed" or "I'll keep my bed dry," were long ago discarded as useless.

A system of awakening the child and calling him to the toilet was then instituted. This procedure alone caused permanent disappearance of the difficulty in 112 or 78.3 per cent of the total number of enuretics.

The method we established is roughly as follows: Observations showed that the hour of wetting the bed was practically the same each night for a given child. This hour, at which a given child may be expected to wet the bed is discovered by the night supervisor and then the child is awakened about one hour previous to his scheduled wetting time. A certain small number require the adding of other hours in order to insure a dry bed in the morning. Experience showed that it was not enough to lead a half wakened child to the lavatory, and we were convinced for our purpose that it was necessary to awaken the child completely so that the process of evacuating the bladder would be a voluntary act. There is no recourse to punishment unless one wishes to so label the inviolate custom of requiring each bedwetter to wash out his own wet sleeping garments and bed linen the following morning. The length of time which this procedure was followed varied from one to six months. The habit seemed to be broken very early in most of the cases. Our experience showed, in the great majority of cases, that a cure was effective in one month or less. When the time was thought proper the calling was discontinued abruptly without warning. Our observations do not indicate that those children who awaken themselves do so at the former hour of calling or not. The foregoing simple procedure produced cure in approximately 80 per cent of the children treated. Thirty-one children of the 143, or 21.7 per cent, however, would revert back to their former habit when calling was discontinued.

Ten children of this 31, or about one-third, who failed to respond to this simpler form of treatment were older children engaged during the day in out-of-door manual

labor and reported as being very difficult to awaken. The experiment was tried of giving these ten older children about $2\frac{1}{2}$ grains of caffeine at bedtime in the form of a cup of strong black coffee. The drug was given, not for its diuretic action, but for its effect as a cortical stimulant with the idea of reducing the depth of sleep and thus permitting the stimulus of the full bladder to disturb consciousness. The results surpassed even our theoretical anticipations. The plan was to continue the use of caffeine only for a short time as most of the children responded to it very early. Two of these older children, in the beginning, would get up by themselves but the apparent cure of the habit was only temporary. The possibility of an acquired tolerance to the drug may have been a factor.

For younger children in whom the calling system does not prove effective, still another method was developed. The aim of this plan was to give the child a strong incentive to keep his bed dry. This was accomplished by hospitalizing the child in a single room. No visitors were allowed to see the child. He was informed that his condition was rather complicated and required intensive study. He was confined strictly to bed. He was given disagreeable tasting medication, such as cod liver oil, and tincture of ammonium valerianate. He was further aroused every half hour during the night and given a urinal. These measures were intentionally planned to make the child's stay in the hospital not pleasant, yet he was given to understand clearly that the treatment was in no sense a punishment. The physician made daily visits to each child and discussed with each the progress of his case. In every instance, cooperation, rather than resentment, was obtained. At the end of a week of this treatment the child was discharged from the hospital back to his cottage. He was told that in case he wet his bed again, he would have to repeat the treatment. In eight cases so treated, it was necessary to repeat only once in two cases. No other treatment was given. The child was put entirely on his own responsibility. None of these eight children has wet the bed since this treatment was concluded, in spite of the fact that they were the most severe enuretics previously and were considered hopeless, from the standpoint of cure.

One boy, Albert C., now aged 15, may

serve as an example. Admitted to the Training School in June, 1928, with a previous history of persistent enuresis, he failed to respond to the routine treatment of calling. He was the most severe enuretic in the School. He would wet his bed on an average of every third night in spite of frequent callings each night. This situation continued for four years, in spite of all forms of treatment attempted. One week's treatment in the hospital as just described, in November, 1932, cured the bedwetting once and for all, notwithstanding the fact that he has not been called at night since that time.

The results obtained by this method are due to the fact that the child has a strong incentive to keep his bed dry, the incentive being a dislike of undergoing another strenuous period of investigation and treatment. It seems probable that the child decided that, rather than submit to another period of hospitalization, he will take matters into his own hands, and when such a decision has been formed no further wet beds will be found. For instance, an attempt was made formerly to restrict fluids. This was ineffectual, the child acquiring fluids by various "bootlegging" measures, such as drinking water while under the shower, etc. After undergoing a "treatment" it is not necessary to order the fluids restricted, the child does not care to drink and will not drink under any circumstances. Each child, following his cure, was interviewed and asked why he stopped wetting the bed, and the answer was essentially the same in each case—that he previously hadn't cared much whether he wet the bed or not, but that this feeling was changed by the unpleasant experience he had had.

Fifteen cases or 10.5 per cent of the

group of enuretics have failed to show improvement. Two of these were paroled from the School before treatment was completed and nine are recent admissions, having been at the School less than one year. The average age of this group is two years less than the average age of the other entire group of enuretics. A few of these children, the more difficult cases, are being worked with in conjunction with the psychiatrist and encouraging results are already being observed.

SUMMARY

I. One hundred forty-three chronic bedwetters were found in 1,360 children admitted to the Wayne County Training School.

II. One hundred twelve or 78.3 per cent of this group were cured by means of simple calling measures.

III. Eight or 5.6 per cent were cured by means of caffeine at bedtime.

IV. Eight or 5.6 per cent were cured by means of a method intended to give the child an incentive to keep his bed dry.

V. Fifteen or 10.5 per cent, consisting of new admissions and younger children are still under treatment.

CONCLUSIONS

1. Bedwetting is a habit which may usually be controlled by means of a system for calling the child.

2. The child will keep his bed dry if there is sufficient incentive for him to do so.

3. Medical treatment, with the single exception of caffeine, has proved of no value.

REFERENCES

1. Hamill, R. C.: *J. A. M. A.*, 93:254-257, 1929.
2. Feer, E.: *Jarh. Kinder.* Berlin, 139:38-44, 1933.
3. Wodak, Ernst: *Jarh. Kinder.* Leipzig, 87:47-60, 1918.
4. Mayo, Leonard W.: Personal communication to R. H. Haskell.

FEDERAL MEDICAL RELIEF AND EMPLOYEES' COMPENSATION

Four million persons have been placed within the last few weeks under the coverage of the Federal Employees' Compensation Act. The mechanism of this new phase of governmental activity is described under Government Services in this issue of *The Journal*. For every injury and occupational disease ing from such injuries and diseases, they or their surviving dependents are entitled to compensation. This army of employees has been hired and put to work, many of them in strange fields, without medical examination or approval. The possibilities of

the situation, present and future, require the serious consideration of the medical profession. Under the cover of emergency activities, the government is enabled to undertake actions that would not be assumed in less feverish times without extended hearings by all the elements of the population concerned. Physicians view with alarm this gradual transmutation of medical practice into a function of government bureaucracy. History indicates that measures introduced in an emergency tend to be perpetuated by the bureaucrats developed to make them effective during the emergency. The medical profession requires some assurance that these new invasions of medical practice by the government are to be truly emergency measures in the strictest sense of that term.—*Journal A. M. A.*

THE TREATMENT OF PRIMARY DYSMENORRHEA*

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Primary dysmenorrhea is usually defined as painful menstruation in the absence of any demonstrable pelvic pathology. We realize the difficulty of fixing the line at which the normal deviation of pelvic viscera ends and pathological change begins. Undoubtedly, many of the so-called "functional disturbances" are accompanied by anatomical changes which escape our present diagnostic procedure. However, we assume that uncomplicated retroversion in many young females is physiologic as is also most atresia of the nulliparous cervix, infection being absent. In parous individuals we have not considered small cervical lacerations or erosions pathological if uncomplicated and have also judged slight relaxation of the pelvic floor as normal. The treatment of membranous dysmenorrhea or the rare nasal dysmenorrhea has not been included.

Constitutional factors determine to a large extent whether or not a woman suffers from menstrual pain. As Gellhorn¹ has pointed out, most patients with this disease belong to the asthenic group. He further divides them into the infantile type, characterized by delayed puberty, hypoplastic organs, and nervous instability, and the intersexual type, with masculine hirsutism, long bones, and frequent sterility. The frequency with which constitutional defects are found in these patients would lead one to believe that the ultimate etiological agent must be an endocrine imbalance. However, many women have various degrees of menstrual pain without exhibiting any bodily defect.

Classification in this disease is difficult. Many methods have been advocated and of these the simplest has been chosen. We divide them as follows: First, the obstructive type, usually seen in those young women with small uteri in normal alignment, the cervix long and conical with a pinpoint external os. The pain in these patients begins commonly a day or so before the onset of bleeding, increases in intensity up to the onset, and then is quickly relieved, often with the passage of a few small clots. Secondly, we have the congestive type, characterized by pain that is more often steady than colicky, beginning most often at or

just before the onset of the flow and continuing until the period is nearly over. Not all cases will fall into these two groups, but further classification into neurotic, hypoplastic, or constitutional types seems unjustifiable. More important is the question of the origin of the pain. Novak and Reynolds² believe it to be in the actual muscular contraction of the uterus and have shown that, in the rabbit, this contraction can be augmented by follicular hormone and diminished by the corpus luteum hormone, progesterin.

It has been observed many times that menstrual pain is a relative symptom, depending much upon the psychic pattern of the individual. Granting this, we are still obligated to relieve all severe dysmenorrhea, even though intensive study of the patient indicates that the treatment should be largely psychological. Horney³ has well shown the psychic background of many menstrual disorders and advises psychoanalysis for its detection. Pratt⁴ believes that mental therapy is best for all but the cases due to mechanical obstruction. The difficulties of life are exaggerated for many of these individuals and an improved mental attitude may often turn the balance from inadequate to successful treatment.

Let us consider general measures first. We give much thought to diet even though we have not been able to demonstrate the allergic reactions, described by Rowe,⁵ in any of our cases. Obese individuals, generally constipated, are aided materially by a sensible reduction diet and regular evacuations. If the latter can be secured without cathartics less pelvic congestion ensues. A high caloric intake is rigidly ordered for the thin, undernourished women and if this fails to increase their weight small amounts of insulin, ten units twice a day, are used. This

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latter procedure will increase the appetite but we have seen few permanent gains in weight as a result. Faulty posture is an important factor in dysmenorrhea, as shown by Miller.⁶ Corrective exercises, although prescribed, have been largely unsuccessful in private practice. Apparently more control of the patient is necessary.

Regular outdoor exercise and sufficient rest are always emphasized. The latter is especially important for those highly emotional women who are chronically exhausted. Often enough they are relieved of menstrual pain during a long vacation in a changed environment, only to have the symptom return when they again take up their regular routine. Tonics are used infrequently because of our persistent doubt as to their real value. Repeated blood studies show a surprisingly high incidence of secondary anemia in these patients and for this we use iron, chiefly Bland's mass, in large doses over long periods. The newer liver and gastric preparations with iron are used in refractory cases. Focal infection, when encountered, should be eliminated if possible. Much of the above discussion could be dismissed as dealing with routine or supportive treatment. I have chosen to call attention to it because it is exactly that kind of treatment that is likely to be of great value in dysmenorrhea of obscure origin.

The local therapy must consist in bringing the slight deviations allowed by our definition back to normal. This should be done without surgery whenever possible. However, one should not hesitate to use cervical dilatation, under anesthesia, in patients with obstructive dysmenorrhea. Curettage, a great temptation, is of no additional benefit. A careful examination during the anesthesia is more important. With anteflexion we have tried ivory stem pessaries after dilatation but their potential danger is greater than their value. The question of surgical correction of uncomplicated retroversion is sub judice. All other methods should be tried first. However, two of our patients have been permanently relieved by suspension of the uterus, and in one of these severe vomiting which accompanied the pain was also checked. For those patients with slight relaxations of the pelvic floor following childbirth, supporting pessaries are fitted and given an extended trial if well tolerated. The hard

rubber type seems best and the shape may be changed as desired until a comfortable support is attained. Diathermy has been of no value in our hands. Most important of all is the avoidance of meddling surgery in these over-operated individuals.

The pharmacopeia lists upwards of a hundred drugs described as useful in this disease and if one cares to delve into folk-lore and superstition, the number of preparations is enormous. Most all are worthless. Belladonna or atropin has been used in a few cases with some success although judgment is difficult because sedatives are usually administered with it. Atropin is best given in doses of 1/150 grain orally and repeated every four hours until pupillary dilatation and dryness of the mouth are present. Belladonna is used in doses of the tincture M x every three hours. We prefer the latter because it seems just as effective and causes less annoyance to the patient. The use of other antispasmodics such as benzyl benzoate or that old favorite, viburnum, has been discontinued. Sedatives must be exhibited often and of these the salicylates or the various coal tar products such as phenacetin or acetanilid are preferable. Acetyl salicylic acid in repeated doses of ten grains will suffice for the mild cases and few untoward results attend its use. More frequently a combination of salicylate and one of the barbitol group is prescribed. With these sedation is more marked and of longer duration. We have noticed that the simple, inexpensive products are quite as effective as most of the patented preparations.

If narcotics are necessary to control the pain, as sometimes occurs, codeine is to be used. Large doses may be given and repeated without danger of addiction. It may be used in combination with salicylates if desired. Codeine is best given by mouth even though more of the drug is required. Hypodermics are apt to implant in the minds of these patients the idea that their monthly pain can be relieved in no other way. The use of the opium compounds should be reserved for the cases of intractable pain and then only while waiting more radical treatment.

Endocrine therapy has been used in this disease for many years. Even before the development of the specific hormones now available, good results were frequently reported with the cruder preparations of ovary and corpus luteum. Ovarian residue, ad-

vocated by Graves, was probably the best of these. Of late, they have all been cast aside and attention centered upon the concentrated follicle and anterior pituitary hormones. Theelin, or folliculin, has been of no value in the treatment of dysmenorrhea in our practice. Used intramuscularly, or orally as theelol, it will enlarge the uterus in hypoplastic cases and sometimes bring about more regular periods but no relief from pain has been observed.

Recently Novak⁷ has shown that one of the biologic effects of theelin is to augment uterine contractions, while the corpus luteum hormone, progestin, has the opposite action. Theoretically then it would seem logical to increase the supply of progestin in these patients. Since this hormone is not at present available for human use, Novak reasons that the same result may be achieved by administering the luetinizing fraction of the anterior pituitary, or rather its counterpart as derived from the urine of pregnant women. We have used this substance, Antuitrin S, in eight cases since the publication of Novak's report. It probably has some specific action upon the uterine musculature besides its effect upon the ovary. Injections of 1 c.c. have been given at various times during the last two weeks of the cycle and repeated frequently in an effort to decrease the painful contractions at the onset of the flow. So far only one case has responded well. Several have shown large wheals at the site of injection. When administered first at the time menstrual flow and when the pain is greatest, it seemed of slight benefit.

Thyroid substance is given to many of these patients. Doses of $\frac{1}{4}$ to $\frac{1}{2}$ grain twice or three times a day seem to aid materially the comfort of individuals with a lowered metabolic rate. In cases in which the metabolic rate is normal or elevated results are not so favorable. Its action is probably exerted through the anterior pituitary and thence to the ovary.

So much for the present status of endocrine therapy in primary dysmenorrhea. And now, at the risk of bringing upon myself the criticism I have made of many methods, I wish to present a new and somewhat different idea about this subject. For some time past it has occurred to me that the action of whole posterior pituitary extract in contracting the uterus after the third stage of labor is not as vigorous or as prolonged as the action of the oxytocic factor

alone. This latter substance, pitocin, apparently possesses a potency that is decreased or antagonized by some other fraction of the whole posterior extract. With this thought in mind I wondered if the other fraction of the posterior pituitary, the vasoconstrictor substance, pitressin, might not bring about in the non-pregnant uterus a decrease in the excessive contractions that probably cause the cramps of dysmenorrhea. Pitressin was therefore administered to patients with primary dysmenorrhea, the drug being given hypodermically in doses of twenty to forty units (1 to 2 c.c.) at the beginning of and during the period of the pain. The blood pressure was carefully watched during this procedure and at no time was a dangerous rise observed. So far we have used this substance in six cases, far too few to report any definite results. In five of them there has been partial or complete relief from the pain. Immediately after injection one sees a temporary increase in the cramps probably due to the small amount of the oxytocic fraction in the preparation. No other untoward results have been noticed. We expect to continue this clinical study and make an extended report when sufficient cases have been treated to warrant definite conclusions.

There is already at hand some experimental evidence that pitressin will decrease uterine contractions. Reynolds,⁸ working with the uterine fistula in the unanesthetized rabbit, has found that pitocin causes a tetanic response in the regularly contracting uterus which is of longer duration than that caused by pituitrin. Further, the tetanic contraction after pituitrin is followed by a period of inactivity lasting for several minutes, while with pitocin the inactive period is not seen and the contraction gradually decreases in amount over a somewhat prolonged period. Reynolds⁹ has also recently shown that calcium salts cause a sustained contraction in the rhythmically contracting uterus lasting one to four minutes. The magnesium ion in contrast has a relaxing effect. During these experiments the action of pitressin* and pitocin was observed upon the uterine fistula in a state of contraction induced by calcium. I quote Reynolds as follows, "Three or four minutes after injection of 0.5 c.c. of pitressin the contracted uterus becomes relatively

*The pitressin for this work was furnished by Parke, Davis & Co.

quiescent and is absolutely refractory to subsequent injections of calcium or pitocin unless the uterus is again motile. Moreover, it was frequently observed that pitressin for a time abolished the spontaneous contractions of the uterus and rendered this organ transiently refractory to both calcium and pitocin." At present one may only conjecture whether or not this action will be consistent in humans and, if so, what its value will be.

The present status of therapy is such that occasionally a patient is seen with incapacitating pain entirely unrelieved by any of our available methods. If the patient is past middle age it is usually best to advise radiation sterility for permanent relief. We prefer x-rays to radium for this purpose. I doubt if this procedure is ever justified in a young unmarried woman. Pregnancy so often relieves the condition that it is much better to wait until long after marriage before advising such radical therapy.

SUMMARY

1. Primary dysmenorrhea is probably a symptom of an underlying constitutional defect.

2. The medical treatment, and such surgical treatment as has been advocated, often fails in severe cases.

3. Endocrine therapy, now only approaching a scientific basis, may be of much value in the future.

4. The experimental results of pitressin administration justify further study of this substance in dysmenorrhea.

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LITERATURE

1. Gellhorn, G.: *Am. Jour. Obst. & Gynec.*, 24:481 (October), 1932.
2. Novak, E., and Reynolds, S. R.: *J. A. M. A.*, 99:1466, 1932.
3. Horney, K.: *Am. Jour. Obst. & Gynec.*, 25:694 (May), 1933.
4. Pratt, J. P.: *Endocrinology*, 16:45 (January), 1932.
5. Rowe, A. H.: *Am. Jour. Obst. & Gynec.*, 24:233 (September), 1932.
6. Miller, N. F.: *J. A. M. A.*, 95:1796 (Dec. 13), 1930.
7. Novak, E.: *Am. Jour. Obst. & Gynec.*, 24:319 (September), 1932.
8. Reynolds, S. R.: *Am. Jour. Phys.*, 92:430 (March), 1930.
9. Reynolds, S. R.: *Am. Jour. Phys.*, 105:305 (August), 1933.

AUTONOMIC NERVOUS SYSTEM IN ITS RELATION TO THE OPHTHALMOLOGIST AND OTOLARYNGOLOGIST*

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JACKSON, MICHIGAN

The original purport of this paper was to have been a review of the literature concerning the relation of the autonomic nervous system to our special branch of medicine. Illness having prevented, I must apologize for the incompleteness of the review. However, if I can stimulate a discussion on the clinical findings in our field, I will feel gratified.

Disturbances in the balance of the autonomic nervous system would include such conditions as endocrine dysfunction, allergic reactions, asthma, protein sensitization, angio-spastic conditions, certain skin and mucous membrane changes as urticaria, scleroderma, angioneurotic edema, eczema, atrophic rhinitis, etc. If these could be correlated in terms of the autonomic nervous system it might help us in future basic underlying principles in their management and treatment. The best working basis we have at present is by the determination of whether there is a predominance of symptoms of one

or the other antagonistic groups, so called, vagotonia or sympathicotonia.

Our present knowledge of the autonomic nervous system has been concisely summarized by W. K. Livingston, who states that, "In spite of the present confused state of knowledge in this new field of study, evidence is accumulating that in the region of the hypothalamus there are visceral centers exerting a control over water balance, the metabolism of fats and sugars, vascular adjustments (perhaps even the activities of capillaries and sweat glands), regulation of temperature, and a balanced control of

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glandular secretions and smooth muscle tonus changes in the internal organs. Evidence is accumulating to indicate that the visceral nervous system, which is the intricate network of neurons by which these activities are affected, regulates and, in turn, is affected by the P_H of body fluids; influences and expresses the activities of certain glands of internal secretions; controls the mobilization of leukocytes and other cytologic defense mechanisms; has some relation to the formation of antibodies, and is important in those changes associated with protein sensitization and anaphylactic shock."

In the study of the autonomic nervous system such men as Langley, Cannon and Brown early differentiated the two antagonistic groups of fibers. The parasympathetic group is made up of fibers accompanying the third, seventh, and ninth cranial nerves. It includes the vagus nerve which constitutes the major portion of this group and because of the similarity in action includes, also, those fibers accompanying the sacral nerves. For this reason it is called by some the craniosacral group.

Their antagonist, the sympathetic group, is composed of pre- and post-ganglionic efferent fibers from the first thoracic to the first lumbar segments inclusive communicating with the somatic nerves through the white and grey rami communicantes. The upper fibers pass into the neck to form the cervical sympathetic ganglia. The largest or superior cervical ganglion continues on through the carotid plexus to its extensive distribution in the head.

These research workers have shown how the autonomic nervous system is really a part of the central nervous system situated outside of the cord. Its purpose being for quick dissemination of impulses in states of fear, etc. It is primarily a defense mechanism for quick action, differing from the slow segmental reflexes of the somatic nervous system. This is aided by its multipolar neurones.

With the use of such drugs as nicotine, muscarin, pilocarpin, ergotoxin, atropine, etc., they have shown experimentally the antagonistic action of the two groups of fibers. A predominance of action of one gives rise to symptoms of vagotonia and of the other to sympathicotonia. The following are some of the symptoms of vagotonia (Crile Clinic):

Eye:
narrow palpebral fissure
blepharospasm
infrequent winking
enophthalmus
epiphora
accommodation spasm

Skin:
hyperhidrosis
dermatographia
acne

Respiratory system:
irregular respiration
bronchial asthma
laryngospasm
husky voice

Circulatory system:
arrhythmia
bradycardia
eosinophilia

Nervous system:
insomnia
mental irritability
easily fatigued

Metabolism:
increased sugar tolerance
increased fat tolerance
status thymolympaticus

SYMPATHETICOTONIA SYMPTOMS

Eye:
mydriasis
myosis on forced inspiration
myosis on forced expiration
wide palpebral fissure
winking reflex diminished
prominence of eyeball
faulty convergence

Skin:
urticaria
angioneurotic edema
facial pallor on emotion
hypohidrosis
pigmentary anomalies

Respiratory system:
dyspnea
tachycardia

Circulatory system:
palpitation
exaggerated amplitude of cardiac contractions
pulsation of superficial vessels

Nervous system:
neuroses
psychoses

Metabolism:
low sugar tolerance
alimentary glycosuria

In determining the status of these individuals the physical findings and history give valuable information: evidence of endocrine dysfunction (the robust as opposed to the asthenic type), basal metabolism, glucose tolerance, history of any of the following: arthritis, asthma, eczema, urticaria, food idiosyncrasies, hay fever, angioneurotic edema, vasomotor rhinitis, peptic or duodenal ulcer, mucous colitis, spastic colon, angiospasm (migraine, tic douloureux), cardiac arrhythmia, constipation or diarrhea, polyuria, dizziness, lethargy, flushing of skin, etc.

The method of determining whether there is a positive sympathicotonia as carried out by the Crile Clinic is by the injection of $\frac{1}{2}$ c.c. of 1:1,000 adrenalin subcutaneously. If there is a 10 point rise of pulse for 1 hour and at least a 10 point rise in the systolic blood pressure and a corresponding drop of the diastolic pressure for the same period of time the test is considered positive. Other factors such as increased respiration, skin flushing, hidrosis, tremor, etc., are also taken into consideration. There is no satisfactory test at present for vagotonia.

Considering the causes for an unbalance of the autonomic nervous system let us take first endocrine dysfunction. The glands that stimulate the sympathetic, according to Simpson, are the thyroid, suprarenal and pituitary. Those inhibiting are the thymus, pancreas and parathyroid. Hormone activation of the endocrine glands is produced by every mental activity and emotional state as well as by physiological and pathological changes in the body. It is not surprising, therefore, that an unbalance should develop especially when the autonomic system is intrinsically instable. There is an attempt on the part of the glands to compensate when affected. And frequently there are symptoms of vagotonia in one part of the body and sympathicotonia in another.

In reviewing the literature of the endocrines relative to ophthalmology and otolaryngology there is very little referable to the latter. Weiner has given some valuable data concerning the eye. Taking the glands separately he has shown that the most studied has been the thyroid, especially in regard to exophthalmic goitre. In this condition there is an increase of the fat in the orbit. Exophthalmus may develop after as well as preoperatively. Reudemann states that exophthalmus is relieved in not more than 2 per cent of the cases. VanGraefe's or Stellwag's sign is usually present. Convergence insufficiency is an early sign (25 per cent). Moist palms, active pulse and tremor may also be present. Complications such as drying of the cornea and paralysis of the sixth nerve may develop. Parathyroid tetany may develop following thyroidectomy. This may be manifest in the eye by acute ciliary spasm followed by posterior lenticular changes and cataract. To prevent this it is advisable to see that the patient has a normal blood calcium before operation. Hypo-

thyroidism is usually associated with a minus basal metabolism rate and low sugar tolerance. Ince reports that in progressive myopia stretching of the sclera is due to a lack of adrenalin. Irregular cornea and hemorrhage in the vitreous with calcium deficiency have been attributed to hypothyroid.

Pituitary dysfunction: The most frequent symptoms from this are produced from pressure on surrounding structures, blockage to the flow of cerebrospinal fluid, variable field changes from the same cause, enlarged blind spot, nystagmus, blue sclera, choroid disease and yellow optic disc. The anterior and posterior lobes may enlarge in pregnancy.

Gonad dysfunction: There may be a contraction of form and color fields in pregnancy, blurring and specks in the eyes, neuritis and papillitis, conjunctival pigmentation, subconjunctival hemorrhages with menses. Weiner reports choroiditis and amblyopia with masturbation.

Spleen: May give scrofulus iritis.

Pancreas: Myopia may develop in diabetes due to water and sugar retention; ocular palsies such as diplopia with involvement of the sixth nerve may occur. Some report glaucoma as due to endocrine dysfunction.

From the standpoint of the ear Gotlieb reports a number of cases of deafness due to adrenalin deficiency.

Another large group of symptoms to be considered in a labile autonomic system are those due to allergy. Lemoine includes as cases of allergy: sympathetic ophthalmia, parenchymatous keratitis, phlyctenular conjunctivitis, and spring catarrh. He links up most ocular anaphylaxis with disturbed endocrine balance. Hensel, in a very comprehensive report of allergy in the nose and paranasal sinuses, though he gives many factors in the etiology, does not mention endocrines. Skin tests are only an aid in the diagnosis of allergy, for, as Feinberg states, "Negative skin tests do not necessarily mean an absence of sensitization to these substances. And positive tests do not necessarily indicate the cause of the clinical symptoms." With our limited knowledge of allergy, I do feel that the various syndromes could not be satisfactorily grouped as to their reaction from the standpoint of the autonomic system such as vagotonia or sympathicotonia.

I became interested in this subject while

giving a series of non-specific protein injections. I felt that possibly the results from the foreign protein were due to the reaction on the autonomic system. There seemed to be a better response in some cases with an allergic history. The most satisfactory results were in ocular conditions using typhoid vaccine intravenously as used by Dr. Howard. After hearing a talk by Dr. Peete in which he states that intravenous typhoid vaccine gave a temporary paralysis of the sympathetic system, I concluded that this may be an important factor in all non-specific protein therapy and especially the improvement in ocular conditions. Without being in a position to substantiate this theory experimentally, I merely state my feeling is that the autonomic nervous system plays an important role in foreign protein therapy.

There are a number of other conditions of local disturbance of the autonomic system which because of our meager knowledge of the subject I will merely mention: sphenopalatine neuralgias, migraine, allergic headaches, atypical facial neuralgias which

are not relieved by surgery on the gasserian ganglion. Some authors have tried to explain them on the basis of angiospasm, others on the basis of degenerative changes in the sympathetic ganglia. Sluder has given us an impetus for study along these lines.

In this whole group of conditions one must naturally be impressed with the necessity for a careful history and examination especially relative to allergy and endocrine dysfunction. Treatment at present is based on the removal of these causative factors. Surgery in the nose should only be with the idea of improving the ventilation unless infection is the allergin. Foreign proteins should have a place in our therapy, especially in ocular conditions.

In conclusion, I feel that it would be to our advantage if we could classify the various conditions pertaining to an instable autonomic nervous system in terms of the autonomic system. In so doing it may lead to certain basic principles of therapy that would be valuable in a field that is at present in a very confused state.

SURGICAL JUDGMENT

CLARK, D. BROOKS, M.D., F.A.C.S.†

DETROIT, MICHIGAN

While we have long known that experience is the best teacher, we must consider from time to time whether the experience gained is used as profitably as it should be. There are many problems in surgery that require all the art and science procurable. Experience teaches us that perhaps physicians as a whole are at times neglecting the use of the senses in arriving at a diagnosis; using the newer laboratory methods, or accepting data which may be misleading. It is easier to call upon the laboratory for information which could be obtained by careful history taking, and painstaking thorough examination. The physician who relies on laboratory data, easily obtained for him, as the means to a correct diagnosis without careful examination of the patient, will have many sorrowful experiences at the expense of his patient. Both in the hospital and also in private practice there is a tendency to make diagnoses without securing sufficient information. A good subjective history with definite knowledge of the patient's habits, work and environment, would in many cases aid in making a correct diagnosis. When an office patient

makes more than one visit for an examination, recheck of the clinical history is essential, in order that certain details which were at first overlooked may be brought out. As the disease progresses impressions made at first examination must necessarily be changed. In history taking the mental attitude of the patient toward his symptoms may well be studied. Symptoms which appear most outstanding in the mind of the patient are often most trivial after complete examination. For example, female patients frequently consult the surgeon with symptoms referable to the pelvic organs, as bearing down sensations, disorders of men-

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stration, lassitude, nervousness, etc. They have been informed that a laceration of the cervix or perineum, or perhaps a moderate prolapsus, is causing the disability. The history then would locate the pathology in the pelvis, and while many of these patients have disorders of their pelvic viscera, examination often reveals well marked primary hyperthyroidism, adenomatous goiter or marked visceroptosis. Physicians should exercise great care in the handling of individuals who upon first examination have well marked symptoms of hyperthyroidism, but who, upon careful check up later, show evidence of a condition known as cardiovascular asthenia. While these patients may have symptoms of dysthyroidism the difficulty is usually due to constitutional or endocrine dyscrasia. Patients with cold hands or feet even in the presence of some hyperplasia of the gland should seldom be subjected to surgery. Cases of true hyperthyroidism are greatly improved by the administration of small doses of Lugol's solution and phenobarbital over a period of a few weeks, whereas the cardiovascular asthenic patient shows little or no beneficial effects. It will be well to remember that neither the metabolic rate nor the size of the gland are an index of the relative toxicity of a diseased thyroid.

Often the patient tells the attending physician that he wishes to determine the cause of his fatigability or loss of weight, thus presenting himself for a partial or limited examination only. It is necessary then to convince him of the importance of a complete physical examination, and to secure his coöperation to obtain adequate laboratory information, such as, urinalysis, blood count, blood Wassermann, and necessary roentgenological studies. The source and reliability of all laboratory data should be carefully investigated. At times physicians obtain data about x-ray examinations which they may not understand. A short concise report is most desirable.

A correct diagnosis, then, is of the utmost importance, and when it can be obtained, it is of greatest value, both to the patient and the surgeon before operative procedure is undertaken. Major surgical operations are no longer a one man task. Only the best results will be obtained by the team work of well trained hospital personnel and assistants.

It is essential to know when a goiter pa-

tient is fit for surgery. Set rules have no place in this matter. Many goiter patients with the same relative degree of hyperthyroidism react differently to operation. The moderately severe hypertensive individual with a goiter should have careful preoperative medical care. These patients often have an accompanying well marked myocarditis, and many give a history of having been on digitalis medication for some time. This factor is an added risk to this type of case.

Post-operative care as well as attention to detail will lessen the danger and reduce both the morbidity and mortality in this type of operation. The following post-operative measures should be carried out. 1. Subcutaneous saline for a period of at least twenty-four hours. 2. Fluids freely by mouth. 3. Lugol's solution mm. 10 to 15, three times a day by mouth. We have found it advantageous to add 20 mm. of Lugol's solution to the first 1,000 c.c. of saline given subcutaneously. 4. Luminal, grains one-half every six hours, morphine as necessary to control pain.

Cancer of the breast is on the increase, and all lumps not due to lactation should be regarded with suspicion. Tumors of the breast should not be removed under local anesthesia as an office procedure. Unless the tumor is a small movable fibroma the patient should be sent to the hospital and under gas anesthesia the suspected tumor should be completely removed and sent to the laboratory for immediate microscopic study. Should it prove to be malignant radical procedures may be instituted at once.

Operation is seldom advisable as an emergency procedure in bleeding from suspected ulcers of the gastro-intestinal tract. Of special importance is the medical management of such patients, which included the following: 1. Absolute rest in bed. 2. Nothing by mouth. 3. The administration of subcutaneous saline, over a period of several days. 4. The administration of intravenous dextrose and sterile distilled water daily. 5. Small repeated blood transfusions. 6. Large doses of morphine.

Likewise operations on the biliary tract are seldom emergencies, and adequate time may be profitably spent in properly preparing these patients. The patient with empyema of the gallbladder is usually improved by the use of massive hot packs over the liver and the administration of dextrose in-

travenously. Under these circumstances operation can be safely deferred as long as such improvement continues. If, however, the patient does not respond to the above treatment after twenty-four hours, most conservative surgery under local anesthesia should be performed. Extended operations in the jaundiced, obese or hypertensive individual should always be avoided, if possible. Of course, surgical procedures should be instituted before complications arise.

The Levine tube introduced through the nasal route is a most valuable adjunct in operations of the intestinal tract. One should not wait for vomiting, dehydration or symptoms of collapse before instituting this type of therapy. By its use we are able to both empty the upper intestinal tract and administer, through it, saline and dextrose at regular intervals.

Thousands of cases of early acute appendicitis are operated annually, with an unusually low mortality, whereas, the late complicated case requires skillful surgery and careful post-operative management. The patient seen late in the disease with local abscess formation of several days' or weeks' duration should be treated most conservatively.

In cases coming to the hospital with very marked distention and with fast pulse, with or without cyanosis, medical treatment is often advisable for a few days rather than any type of operation, as these desperately sick patients will not stand any type of operation, but may after a few days of medical treatment, consisting of large hot packs over the abdomen, daily intravenous dextrose solution, use of the Levine tube, nasal method, to empty the stomach and upper bowel, with morphine if necessary, become good risks. After a few days of such treatment, improved conditions sometimes make it seem advisable to postpone any surgery. In many such cases it is well to postpone surgery for a period of weeks or months, allowing the patient to leave the hospital and return at a later date for his operation.

We are quite convinced that this is the only method of procedure in a great many cases, especially in patients over fifty years of age, and those who are obese. When operation is performed in fairly early cases of acute diffuse peritonitis as found with gangrenous perforative appendicitis, we advise good sized incision, and while we may use a soft rubber dam for drainage no gauze or

drainage tube should be used, but the wound should be left entirely open, allowing, if possible, a small portion of the omentum to come up just outside the peritoneum. It is surprising how well these patients will do, and then later the wound may be closed by secondary suture.

Experience has taught us that unless the appendix can be readily removed, it is wiser to drain the abscess cavity. Searching about the pelvis for the remnants of a ruptured appendix breaks down Nature's protective barrier; as stated above, in many instances it is safer to merely drain the abscess and make no attempt to close the wound, but to do a secondary closure. No attempt should be made to invert the stump in cases of perforative appendicitis.

Operations should be avoided, of course, in spreading peritonitis, because of the danger of extending the infection. Absolute rest in bed, placing the patient in Fowler's position, the use of the Levine tube, hot stupes over the entire abdomen, and adequate doses of morphine are most essential in the handling of these desperately sick cases. We have found that the use of foreign protein such as sterile milk given intramuscularly is a valuable means of increasing the patient's resistance. We also think that it is very important that a prophylactic dose of mixed tetanus gas gangrene serum be given in every case of peritonitis due to appendicitis or intestinal obstruction. In diffuse peritonitis following septic abortions we have found that repeated small blood transfusions (200 to 300 c.c.) are of extreme value, and advise against any surgical measures in these patients when accompanied with high fever and distention. Treatment of the peritonitis should be the same as in any diffuse peritonitis. We advise against the use of ice over the abdomen in any form of questionable peritonitis. If ice is used it masks the symptoms, lowers the local and general resistance of the patient and retards leukocytosis.

After a diagnosis of pelvic tumor has been made, operation may or may not be advisable, depending upon the patient's general condition, age, weight and so forth. Many symptomless fibroids discovered during routine examinations may need no operation. Ovarian tumors often are malignant, or become malignant, whereas dermoids have a tendency to degenerate or their pedicle may become twisted. Uterine tumors,

accompanied by hemorrhage, should always be regarded with suspicion. It is important to determine whether the bleeding is due to polypoid endometritis, chronic pelvic inflammatory disease, submucous fibroid, or carcinoma. This can be readily determined by a dilatation and curettage. A biopsy should precede a hysterectomy in patients with menorrhagia or metrorrhagia. The routine use of x-ray or radium we feel is dangerous. We prefer radium to x-ray therapy, because of the importance of curettement for biopsy before its use. Many cases of severe menorrhagia and metrorrhagia may be controlled by radium, after which the menses may become normal and pregnancy may follow.

Operation is advisable in the nodular type of fibroid on account of the danger of degeneration and malignant change. Patients with polypoid endometritis or small fibroids do extremely well with a curettage followed by radium therapy. We believe that supravaginal hysterectomy is the operation of choice when bleeding occurs in chronic inflammatory disease and nodular fibroids. In carcinoma of the fundus uteri, complete hysterectomy is advisable. At times myomectomy for fibroids can safely be performed in individuals under thirty-five years of age. During a routine hysterectomy, the question of removing the ovaries often arises. It is our opinion that the ovaries should not be removed except in cases of well marked pelvic inflammatory disease or malignancy. If an old endocervicitis or laceration exists it is safer to perform a complete hysterectomy and thus prevent the possibility of malignancy developing at the site of an old source of infection.

All pelvic tumors, whether of uterine or ovarian origin, when removed should be examined grossly by the surgeon. This macroscopic examination should be checked by the pathologist as early as possible. Often malignancy is discovered at this time, which of course necessitates the surgeon changing the operative procedure. Thus, the importance of routine frozen sections of all tissue removed cannot be overemphasized.

Operations on the kidney and prostate are seldom emergencies. Rupture of the bladder should be suspected in individuals with multiple fractures of the pelvis. The finding of bloody or scanty urine should make one suspicious. Traumatism should be avoided. If a small soft rubber catheter cannot be easily introduced into the bladder, suprapubic

drainage under local anesthesia should be resorted to at once. All such cases should be submitted for careful cystoscopy when circumstances permit, in order to determine the extent of bladder or kidney damage as well as to obtain knowledge of kidney function. The importance of consultation with an experienced urologist cannot be over-emphasized.

Patients suffering with disease of the genito-urinary tract should be studied by the internist, urologist and surgeon in conjunction with all the information the laboratory can offer.

The opportune time to operate a patient suffering from hypertrophy of the prostate is a debatable question. We believe that a progressive inability to empty the bladder, a residual urine of from 20 to 100 c.c.; dribbling of urine; backache and evidence of chronic cystitis are all indications of prostatic hypertrophy. Before such individuals are subjected to surgery a careful urological examination as well as roentgenological examination is most desirable. The genito-urinary tract, lungs and long bones should be rayed for evidence of metastases. Many hypertrophied prostates considered benign by the examiner often are found to have metastasized to the lung or long bones. In the two stage operation we feel that the suprapubic cystostomy is preferable to the indwelling catheter as a first-stage procedure. Many old and debilitated patients can be made good risks by careful pre-operative medical treatment. We feel that the two-stage operation is the safest, and advocate waiting from two weeks to several months before advising any second stage operation.

It seems hardly necessary to say that many of the beneficial results of surgery in the sick will be lost without the careful following up of good post-operative management.

In diagnoses every important symptom should be carefully followed, and thorough examination insisted upon. Not only is it necessary for the patient's welfare that all laboratory work be done which would be of benefit to him, but it is also of the utmost importance to call in as consultants our colleagues in the laboratory, internists, roentgenologists or those qualified in the different specialties, so that all of us may have a proper part in accepting responsibility. It goes beyond question that all concerned, especially the patient, will benefit by such procedure.

AN OBLIQUE FRACTURE THROUGH THE HEAD OF THE FEMUR WITH POSTERIOR AND UPWARD DISLOCATION OF THE SHAFT—ITS TREATMENT BY THE CLOSED METHOD

A CASE REPORT

FRANK MacKENZIE, M.D.†
DETROIT

Mr. M. L. B. was admitted to the Redford Branch of the Detroit Receiving Hospital, September 3, 1933, following a head-on automobile collision in which both machines were travelling at a high rate of speed. On admission to the hospital he was garrulous, disoriented, in shock and suffering from a severe concussion. He was 47 years of age, weighed 240 pounds and was over 6 feet in height. No one was able to give a satisfactory explanation of the accident except that when rescued he was half standing behind the wheel with the floor board gone and the motor resting against his legs. Previous to the injury his general physical condition was excellent. Examination revealed a four-inch laceration over the frontal region with a raised periosteal flap; a fracture of the 6th right rib, numerous abrasions and lacerations over the body and an apparent fracture in the region of the left hip. First aid was efficiently rendered at the hospital. The following morning, a portable x-ray of the left hip showed as follows: "A study of the pelvis reveals an oblique fracture through the head

the left lung. At this time the patient became very unmanageable and several times worked the extension loose. The extension with a 22 pound weight was re-applied and the patient again restrained.

The x-ray findings as of September 19 are as fol-

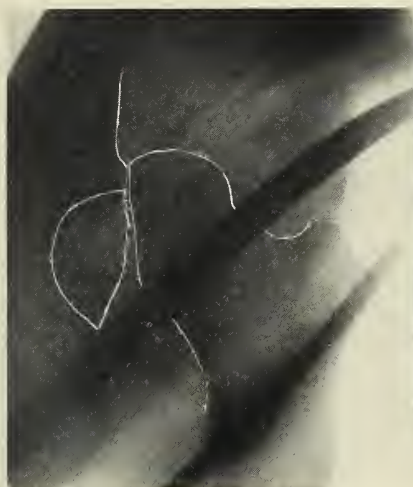


Fig. 1. Relation of the fragments at the time of the accident.



Fig. 2. Repair complete.

of the femur with the tearing off of a portion of the posterior rim of the acetabulum and upward and posterior dislocation of the remaining portion of the head of the femur and the shaft."

Following this x-ray finding and pending the outcome of his cerebral and other injuries, a Thomas splint with extension was first applied to the left leg but it was soon found to be unsatisfactory due to his extreme restlessness, incontinence and the beginning of pressure necrosis. It was found better to apply a Russell extension with abduction. Restraint increased his excitability so that wrist bands were used. An x-ray check three days later showed slight improvement in the position of the fragments but further extension was indicated.

On September 11, the case was further complicated by pneumonia which developed at the base of

lows: "The left hip region has been examined stereoscopically. There has been perfect approximation of the fragments of the femoral head and there are apparently normal relations of the femoral head and the acetabulum. The only abnormality noted is a small bone fragment immediately opposite the upper acetabular region. We think this is of no immediate clinical interest."

The pneumonia meantime having cleared, the question now arose as to the best procedure to follow in order to keep the fragments approximated. We felt that we had been so fortunate in being able to keep the fragments approximated up to this time that an open operation with excision of the fragment, reposition of the remaining portion of the head into the acetabular cavity with resultant ankylosis and shortening was not to be considered. If necessary, this would be done when his other complications had cleared away.

He remained very unmanageable and disoriented in this extension until October 6, when a double Spica body cast was applied. X-rays following the application of the cast showed the position of the

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fragments unchanged. The following day he was sent to his home by ambulance.

As his cerebral symptoms began to improve it was thought advisable to remove the cast in an endeavor to quiet him. This was done November 11. For the next two weeks he remained comfortably in bed, his mental condition rapidly returning to normal. Light and heat therapy with passive motion, gentle massage and full doses of calcium were given at this time. After a few days' preliminary skirmishing he was placed in a wheel chair, then on crutches, and was downstairs November 25 for dinner. A walking caliper was fitted at this time but proved so uncomfortable it was discarded. On December 25, fully dressed, he went for a long drive.

Portable x-ray findings as of January 2, 1934, are as follows: "Re-examination, stereoscopically, of the left hip joint shows the head of the left femur to maintain its normal anatomical relation to the acetabulum. The fracture line through the femoral head at this time is not visible. The film taken of the left

hip and compared with the right hip shows no difference in the appearance of the two hips except very slight demineralization of the left femoral shaft which is secondary to the immobilization. In conclusion: Normal anatomical relations of the left femoral head to the acetabulum. The fracture line is not visible at this time. It has apparently healed completely."

After this report it was difficult to restrain him. He started back to his office January 2, discarding his crutches January 15 and his cane February 1. He began driving his own car about this time and by March 1 his activities were apparently as strenuous as before his accident.

Fractures of this particular kind are exceedingly rare, as a search in medical literature reveals, and when they do appear, an open operation is usually indicated. The illustrations show the nature and extent of the injury, as well as the final result by means of abduction and Russell extension.

PREVENTION OF COMPLICATIONS IN THYROID SURGERY

Arnold S. Jackson, Madison, Wis., states that an error in judgment in thyroid surgery either at the operating table or later may be responsible for the development of complications that greatly alter mortality statistics. Although such a mistake may not result in the death of the patient, it may change his whole future health and welfare. The author gives a list of the complications following thyroidectomy and divides them into three classes: immediate, delayed and remote. Few surgeons performing any number of thyroidectomies have avoided injuring one or even both nerves at some time in their experience. The greatest care should be used in placing hemostats on the lower lateral and inferior poles preparatory to resecting the gland. The failure of the surgeon to place his hemostats sufficiently high on the lateral walls at the start accounts for the majority of complications in thyroid surgery. If the gland is resected from within, leaving only a thin but sufficiently deep outer shell, not only will injury to the nerve be avoided but hemorrhage from within the capsule will be controlled. Serious bleeding from within the capsule can be controlled with the index finger pressing upward and inward along the lateral border of the gland. Injury to or collapse of the trachea may be avoided by careful and not too rapid dissection in a dry field. The absence of valves in the thyroid veins and their tendency to remain patent makes it important to ligate every vessel carefully, preventing air embolism. Proper preoperative preparation should avert acute hyperthyroidism. Complications due to anesthesia can be eliminated by using the superficial nerve block method with the preoperative use of 10 grains (0.6 gm.) of sodium barbital. Leaving a sufficient shell of

gland and capsule will prevent tetany. Hemorrhage the second or third day, however, is the result of improper hemostasis. Sufficient iodine by mouth, by duodenal tube, by rectum or by vein, fluids, ice bags, sedatives, oxygen, good nursing and psychology will usually control hyperthyroidism. Tracheitis is prevented by a careful operative technic in avoiding trauma of any sort to the trachea and by the use of a steam tent, codeine and atropine. In cardiac failure some authors believe that they have saved many lives with digitalis; Plummer and others feel that they have saved lives by not using it. Wound infection is less often seen when no drainage tube is used. Temporary involvement of the nerve may occur as a result of edema of the tissues or trauma. The oxygen tent or a nasal catheter connected with an oxygen tank is indicated in tracheal obstruction and anoxemia. The treatment of mania and psychosis is largely that of a psychosis from other causes. The avoidance of postoperative shock has been ably elaborated on by Crile. All goiter patients should be examined preoperatively for the possibility of glycosuria as a true diabetes, but more often an acute glycosuria will be precipitated by thyroidectomy. The author has seen tetany develop as late as eight months after thyroidectomy. In burned out cases of exophthalmic goiter or in advanced toxic adenoma, cardiac failure is apt to occur in from one to five years following thyroidectomy. To prevent persistent and recurrent hyperthyroidism, a careful postoperative regimen should follow, with iodine for six months, high caloric diet, permanent restraint from stimulants and proper rest. Likewise, in all cases of exophthalmic goiter, septic tonsils, if present, should be removed some months after thyroidectomy. Electrosurgery, however, has been the most important factor in overcoming this most serious indictment of thyroid surgery.—*Journal A. M. A.*

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EDITORIAL

HOSPITAL INSURANCE

The Board of Regents of the American College of Surgeons is reported as placing itself on record as favoring hospital insurance with certain restrictions. The board, for instance, does not favor the management of insurance funds for the profit of promoters or lay agents. There, furthermore, must not be anything that will interfere with the free choice of physician by the patient who carries hospital insurance. It is further specified that hospital insurance must accord with medical ethics. That must mean, among other things, that hospitals refrain from practice in competition with the independent practicing physician. Hospitals enjoy certain advantages that private physicians do not, among them tax exemption, endowments and immunity to malpractice suits. Hospitals which desire to be fair with the medical profession will not include as inducements for insurance, laboratory, medical or surgical service.

Hospital insurance has much in its favor, for often the smallest item in the so-called cost of medical care in illness severe enough to require hospitalization is the doctor's or the surgeon's fee. Were the burden generally borne as it would be under an adequate plan of hospital insurance, the cost of confining illness to the individually insured patient would be materially reduced.

Many members of the medical profession

are wont to view health insurance with certain apprehension, however, fearing that it may be the entering wedge to something that may not be in the best interests of those concerned. They feel that voluntary insurance may be the forerunner of compulsory insurance. However, insurance is apt to be a practice indulged in by the more prudent, as it always has been in the past. The majority will doubtless take a chance on not requiring hospitalization as they neglect insurance in other matters.

BRAIN TRUST

This term as used by the daily press is not meant to reflect credit on the President's disposition to seek trained counsel or advice wherever it may be obtained. It is somewhat puzzling that an enlightened press should assume such an attitude. Progress has been the result of strenuous study and research. The automobile and the aeroplane and in fact almost every other highly developed mechanism or process, chemical, physical, even today's medicine and surgery, are the result of the efforts not of mediocrity but men of the same mental calibre as those who are advising in the various departments of the government. They are really "brain trusters" in science. The greatest service a man may render his generation is to take what has been hitherto a terminus or a blind alley and make of it a thoroughfare. That is what the research scholar is doing.

As a nation we believe in education. Sometimes we are apt to go a little too far with our faith in what might be called mass education. There are doubtless many seeking college training who are maladjusted and who will fail to make good when they are thrust upon a hostile world. This fact, however, should not constitute an argument in favor of mediocrity. There are many trained thinkers in the nation. Why should any one disparage the tendency to look to them for advice if not guidance?

As a profession modern medicine tries to learn from those best qualified to teach. That is what post-graduate instruction really means—namely recognition of the best brains in medicine. The matter of government is as complex as the body of knowledge that makes up every one of the various sciences. It requires as much effort and as keen acumen to master its principles as any one of the various sciences. In a complex

society it is more scholarship rather than less that is required if democracy is to yield its best.

A wise man is one who will seek advice from experts and then correlate it to his own knowledge and understanding. We have complained from time to time of the mediocrity of many men who represent us in the various forms of government from municipal to national. The so-called "brain truster" is the opposite extreme. However, he is not representing the nation. He is simply giving of the results of his research and study much as the physical scientist aids industry. This is not an argument for bureaucracy or for the regimentation of industrial or professional life, which the writer does not favor; we believe that the upmost good can come only by the greatest freedom consistent with the rights of others.

MADAME CURIE

The death of Madame Curie on July 4 removed one of the greatest research workers in a field outside of medicine but which has been of inestimable value to medicine for nearly a third of a century. Her name will be forever associated with the discovery of radium, which has been such a valuable agent in the treatment of malignant disease. The last decade of the nineteenth century witnessed discoveries that were in a short time to revolutionize the science of physics. But we are here concerned with the effect of such discoveries on medicine.

In 1895 Roentgen discovered the x-rays. A few weeks following Roentgen's discovery, Poincaré, the French scientist, felt that since fluorescence within a glass tube appeared to be a necessary condition for the production of x-rays, it would be interesting to study the similar phenomenon of ordinary fluorescent or phosphorescent substances. Henri Becquerel, another French scientist, undertook the problem, beginning fortunately with uranium compounds, the double sulphates of uranium and platinum, which were markedly fluorescent. After a number of carefully planned experiments it was found that the fluorescence had a chemical effect on sensitive photographic plates similar to that produced by the newly discovered x-rays. The new light became known by the name of the experimenter—Becquerel rays. These studies were made during the years 1896-7.

Taking a cue from the work of Becquerel

others took up the work with uranium salts. Chief among such research students was Marie Sklodowska (Curie), of Polish birth, who was afterwards married to Pierre Curie, a French physicist. The husband turned aside from his researches on the properties of crystals to coöperate with his wife in her work on radioactivity and as a result we have the discovery of radium. The story is admirably told by Glasser in "The Science of Radiology."

Madam Curie continued her researches until her later years when, like many other pioneer radium and x-ray workers, she fell a victim of the therapeutic agent she did so much to develop.

FRACTURE OF THE SCAPHOID

The carpal scaphoid is a small bone but it occupies a strategic position in human anatomy. It is a question whether the importance of fracture of the scaphoid or navicular (both words mean "boat-like") bone is fully realized by many. Often if there is no marked deformity following injury to the wrist, the condition is diagnosed as a sprain without any x-ray examination being made. The end-result is apt to be very disappointing to the patient.

The bones of the wrist receive their blood supply from terminal branches of the radial and ulnar arteries. The scaphoid is a somewhat irregular "boat-shaped" bone, as the name implies, made up largely of cancellous structure with a thin cortex. The articular surfaces are in contact with cartilage and the other surfaces are rough for the attachment of tendons and ligaments. When injured the scaphoid is apt to be broken rather than dislocated. To function normally the wrist has great latitude of motion, practically all the movements of all kinds of joints except rotation. When fractured there is often interference with the blood supply with the result that the bone becomes necrosed. The pathology may extend to other parts with resulting limitation of motion and with pain.

Burnett* stresses the importance of early diagnosis by x-ray examination of all wrist injuries, and, where a diagnosis of fracture of the scaphoid is established, immobilization and rest should be secured to obtain bony union if possible. This should contin-

*Burnett, Joseph H.: Fracture of the (navicular) carpal scaphoid. *New England Journal of Medicine*, July 12, 1934.

ue according to this writer for a period of six weeks. A plaster of Paris cast is preferable to splints. Following the immobilization period the wrist should be massaged. He applies the cast with the wrist in the cock-up position with slight radial flexion. The six weeks period of rest is emphasized to facilitate repair of blood vessels and restoration of the circulation as well as for repair of the torn ligaments.

In cases in which there is marked separation or comminution of the fragments Burnett advocates surgical removal of part or all of the bone.

Then he goes on to deal with cases which have been unrecognized and therefore improperly treated until considerable time has elapsed following the original injury. Opinion varies in regard to method of handling such cases. Some surgeons advocate removal of the fragments. Many others would leave well enough alone.

The disappointing results which frequently follow injury of the scaphoid bone demand a careful study, preferably x-ray examination of all wrist injuries; it should be a routine procedure also in all Colles fractures.

HISTORY OF ANATOMICAL INJECTION*

The two periods of greatest advance in human anatomy have been associated with the Post-Vesalian dissectors and with the achromatic compound microscope. During the first period, the injection of vessels and hollow organs with colored masses was the outstanding research method beyond the use of the scalpel and probe. In the latter period, injection has provided not only a useful didactic tool, but also an important method in the development of microscopic anatomy.

By means of injection, anatomists have been able to demonstrate the circulation of the blood, the extent of vascular supply, the anastomoses between blood vessels and the existence of end arteries. Knowledge of the ramifications of lymphatic vessels, of the independence of the blood and lymphatic systems and of the valves of veins and lymphatics has also depended largely upon

injection. In addition, one may attribute to injection technics the disproval of the hollow nerves of the Galenic physiology, the demonstration of a placental barrier between the maternal and fetal circulations, and the discovery of the continuity of the duct system of the testes and of other glands. Finally, anatomical injection has led to methods for the preservation of bodies and, because of the picturesque quality of many injections, to an important pedagogical device.

During the period before Harvey, few injections had been made. Galen had inflated the cerebral vessels with air; da Vinci had filled the ventricular cavities of the brain with wax; da Carpi, in 1521, using a syringe, had injected the renal vessels with water; and Massa, fifteen years later, had inflated the tubes of the kidney with air. Other anatomists occasionally studied the distribution of blood vessels after injection.

Harvey used the injection technic in supporting his view of the circulation of the blood. In a letter defending his treatise on circulation, he mentioned an experiment in which water injected into the right ventricle passed into the lungs and returned through the pulmonary veins to the left ventricle. In 1652, Marchettis injected water into the arteries, through the capillaries and into the veins. During the first part of the seventeenth century, water, wine and air were the principal injecting media. Because they escaped too readily from the vessels, such media were of minor importance in anatomy, though they were of considerable value in physiological experiments. At this time, it was learned that air injected into the blood vessels of living animals killed them, that wine and ale injected into the blood vessels made animals drunk, that intervacular injection of drugs had a rapid physiological effect and that the injection or transfusion of blood from one animal to another was possible.

The latter seventeenth and the eighteenth century saw numerous developments in various methods of injection. The injecting of ink into the renal vessels and air and mercury into the pulmonary vessels led Malpighi to important anatomical conclusions. Willis in 1664 demonstrated with colored fluids the anastomoses of the internal carotid arteries below the brain. Robert Boyle suggested the use of injecting fluids which would later solidify, such as plaster, warm wax and

*This is one of series of historical editorials on methods and devices that have aided in the development of medicine and surgery.

gelatin. Pequet was the first to apply this method by injecting into the thoracic duct hot milk which congealed on cooling. In 1668, de Graaf published a small book on injection technic in which appeared figures of a modern syringe with long bent cannulae which could be attached. He introduced the method of injecting adjacent blood vessels with different colors to demonstrate the extent of their supply. About the same time, Swammerdam adopted the method of injecting with colored wax, standardized the procedure and prepared permanent preparations of injected organs. The outstanding injector who demonstrated the ubiquity of the vascular system was Frederick Ruysch. He used a semi-fluid mass of white wax, suet and tallow colored by vermilion, and he preserved his specimens in dilute alcohol or by drying and varnishing. (Alcohol as a preserving medium had been known only since the time of Boyle.) Caspar Bartholin flushed out vessels with water previous to adding the injection mass.

Bidloo prepared an amalgam of bismuth and mercury for injection into the lungs. When the tissues were removed by corrosion, a cast of the cavities remained. Such anatomists as Duncan, Nuck, Cowper, Muys and Albinus routinely used colored wax, mercury and corrosion preparations for the demonstration of anatomical details. Homberg (1702) devised a metal of low melting point consisting of lead, tin and bismuth for anatomical injections. The low fusing metals, however, were used infrequently before the nineteenth century. Rouhault used gelatin or isinglass for injection. In 1733, Stephen Hales contended that the pressure of injection should be equal to the arterial pressure, and therefore he devised an injection apparatus which maintained a constant pressure. Le Cat filled cavities with wax and then sectioned the body, thus introducing the principle of paraffin imbedding. Lieberkuhn, another outstanding injector, was the first to successfully inject microscopic vessels. In the preparation of his museum, John Hunter used injections of resins, fats, glue and gelatin. Various colored metallic salts—red, yellow, blue, green, white—were introduced into the injection masses. Seventeenth century anatomists had injected the lymphatics with milk, colored watery fluids and oily masses. Nuck in 1692 injected the vessels with mercury. Paolo Mascagni (1787) produced some of the finest lymphatic injections

known with mercury. Fohmann (1833) introduced the technic of random puncture for lymphatic injection. A fine cannula is inserted into the tissue at random until the injection fluid happens to enter a lymphatic vessel. When the vessel is colored by the fluid, it is followed along and reinjected. This technic has been used often by modern anatomists. The small Teichmann syringe was much used in injecting lymph vessels after 1861.

Toward the end of the eighteenth century, though anatomists continued to inject, there were fewer innovations in technic beyond the introduction into the blood vessels of preserving agents, such as corrosive sublimate and arsenic, a practice which was to lead to embalming methods in the nineteenth century. The older anatomists preferred to inject material after the period of rigor mortis and frequently the best injections were made in nearly putrefying material. Injections were made with syringes or siphon devices. In wax injection, the body or organ to be injected was warmed in a vat of heated water. A thin wax was first injected and this was followed by a heavier wax for the larger vessels. Frequently, parts needed massaging in order to permit complete introduction of the injection. For fine injection gelatin had come to be recognized as the most important medium.

With the development of the achromatic compound microscope in the first third of the nineteenth century, a new injection technic, namely microscopic injection, arose. Gross injection continued to be a popular technic, particularly as it concerned the study of the lymphatic system, although such men as Strauss-Durckheim and Hyrtl made important studies on the vascular anatomy of individual organs. The adaptation of the microscope to the study of injections required certain changes in injection methods. Gelatin, glue, glycerine and egg white were the principal media for microscopic injection, but the use of waxy, resinous or oily masses was not discontinued. The use of transparent injection masses in microscopic work proved to be better than the opaque masses of gross injection. Wood extracts, carmin and anilin colors, which were employed in staining tissues, were, whenever possible, used as colors for injection masses, though these dyes frequently diffused through the blood vessel walls. When, in the middle of the nine-

teenth century, it was discovered that Berlin blue and Turnbull blue existed in a colloidal state as well as in an insoluble form, the soluble blue colors became outstanding injecting substances. Other colloidal substances, such as Chinese or India ink, were introduced in the last quarter of the century.

A method was devised by Krause (1837) and Bowman (1842) in which a soluble lead salt and a soluble bichromatic salt were injected consecutively into vessels. The interaction of the two solutions resulted in the precipitation of the insoluble lead bichromate salt in the blood vessels. Doyère injected solutions which resulted in the precipitation of Berlin blue, silver iodide and barium sulphate. A score of years later, Key and Retzius injected clear solutions into the cerebro-spinal fluid of living animals and later killed the animals with agents which precipitated a color. By killing the animals at different times after the first injection, they were able to investigate the path of cerebro-spinal circulation. This method has been much used in establishing the pathway of cerebro-spinal circulation and the circulation of endolymph.

Robin and later Schiefferdecker injected colloidin into blood vessels. When the animal tissue was macerated away from the injecting material, a cast of the blood vessel was obtained similar to the metallic corrosion preparations of gross anatomy. In 1904, Krassuskaja and, in 1906, Huber prepared corrosion preparations using celluloid, a compound of colloidin and camphor which had been known since 1869.

In the technic of microscopic injection procedure, Strauss - Durckheim (1842), Robin (1849 and 1871), Hyrtl (1860) and Ranvier (1888) were the principal innovators. Glass syringes, fine metal and glass detachable cannulæ, syringes with two way stop-cocks for filling the instrument and apparatus for continuous injection were devised. During the latter half of the century, pressure manometers were attached to the apparatus and syringes, and a number of injecting devices depending upon hydrostatic or air pressure were used to force the injection mass into the vessels. Injections were now performed upon material as soon after death as possible. Mayer employed potassium chloride, Hill, lactic acid, and Oviatt and Sargent, amyl nitrate and ether, for dilating the vessels. When these substances were injected previous to the injecting masses or when mixed with the injecting

mass, the small blood vessels were dilated and allowed the injection to flow easily. The use of anticoagulants prevented blood clotting. Camillo Golgi, in 1886, and Mann, shortly after, introduced the method of injecting preserving fluids into the blood vessels of living specimens to procure the quickest possible fixation of tissues. During the nineteenth century, the application of injection technics to microscopical investigation and the refinement of injection methods and procedures in general were the outstanding accomplishments in this field.

In the present century, four injection technics have been devised. Flint and Knower discovered methods for injecting living embryos. Spalteholtz has perfected a method of rendering tissue transparent so that injected organs may be studied without disturbing the surrounding tissues. The third technic is that of injecting preparations for x-ray study. In 1897, Stiles injected mercury into blood vessels and with the x-ray produced shadow pictures of the injected substance. The use of bismuth subnitrate and barium sulphate has largely replaced mercury and Hinman and his co-workers (1923) have adapted a colloidin injection technic to the use of heavy salts for x-raying specimens. Finally, Chambers, through his micro-injection technic has been able to introduce foreign particles, indicator solutions and chemicals into the cytoplasm and nucleus of individual living cells.

SYNCHRONOUS MULTIPARITY

(*New England Medical Journal*)

Despite the bursts of public enthusiasm and inspirational journalism which have attended the most extraordinary instance so far recorded of what might euphemistically be termed *synchronous multiparity*, the birth of quintuplets is nevertheless of distinct medical interest. In all medical history something over thirty cases of quintuplets have been recorded; no properly authenticated case of sextuplets. Prior to the notable achievement of Olivia Dionne, no unquestionable set of quintuplets has survived as such for more than fifty minutes. At the time of writing, the Canadian quintuplets, weighing a total of thirteen pounds at birth, have traveled in each other's company, their ranks unbroken, through this vale of tears for fifteen days. Perhaps they are aware of their goal and are striving for its attainment—exhibitionism on a family pedestal in the World's Fair at Chicago.

According to Professor Alan F. Guttmacher of Johns Hopkins University, multiple births are most likely to occur between the ages of thirty-five and forty. The mother of our present quintuplets is an exception to the rule, boasting only twenty-four summers; seven less than her husband. The rarity of birth multiplicity increases, obviously, with the number of babes at the birth. W. W. Greulich, of the

University of Colorado, studied 100,000,000 births, establishing one in 87 as the chance for twin births. The square of 87, or 7,569, gives the chances in favor of triplets; its cube, or 658,503 the chances in favor of quadruplets. If this rule continues to hold true in the higher registers, quintuplets should make their appearance once in every 57,289,761 births!

The chances of all five surviving the period of infant mortality, at this rate, would require an array of digits so far known only to astronomy.

AN ALIBI

A card expert is reported to have said that one who cannot control his temper will never be a success at Bridge. A poet of the Manchester Guardian has seized upon the thought and presents the readers of that periodical with the four verses here printed. They are reproduced here in the hope that they may supply the necessary alibi for some member of our profession who is asked to make a fourth at the Bridge table.

As one whose mind (for so I find) is stupefied by cards,
I note that chairman's statement with the kindest of regards;
For half an hour at whist or bridge (I here and frankly tell ye)
And my poor brain beneath the strain goes wambly like a jelly.

Yet people come and ha and hum with "Make a fourth at bridge?"
And I must pout and feel about the size of flea or midge;
I wanly say "I do not play," whereat they look surprised;
I'm left exempt, but their contempt is not at all disguised.

But now one sees a better wheeze instead of that old whine.
And when they come, why, "Fee, fo, fum!" shall be my bolder line.
Thanks to the hint the papers print from that bridge-playing boss
I shall thwart their scheme and my self-esteem will not be at a loss.

To him who bids me "make a fourth" the lay will be:
"My lad,
I simply dare not play at cards—my temper is too bad.
Bridge, did you say? Away, away!—before I cut up rough,
And run about and roar and shout and do my cave-man stuff!"

NEW YORK HOSPITAL PRACTISES MEDICINE

(*New York Times*)

In a radical departure from the usual American hospital practice, a plan was announced by the Sydenham Hospital last night to give white-collar workers earning less than \$5,000 a year the privilege of three weeks' hospitalization for \$10 a year. Such patients will receive all treatments at costs, with the understanding that the maximum fee for any one patient will not be more than \$100.

Simon Bergman, president of Sydenham Hospital, one of the institutions approved by the American College of Surgeons, announced the plan last night at the annual dinner of the hospital at the Biltmore. He also revealed that a banking institution has provided facilities whereby patients may pay for hospitalization care in \$2 weekly instalments, as a further aid in the move to reduce hospital costs.

"Our aim is to help the group commonly called the white-collar class," Mr. Bergman said. "By means of our plan they will be able not only to afford hospitalization but also to maintain their self-respect.

"Our group hospitalization plan will include only single persons not earning more than \$3,000 and married persons earnings not more than \$5,000 a year. Persons in the group-plan for the payment of \$10 a year will be assured of a three week stay in our semi-private pavilion should they need hospitalization.

"For the first three weeks of their stay the members of this group will not have to pay any fees for their stay in the hospital. All the necessary x-ray and other laboratory work will be given at cost. In cases where an operation is necessary, there will be no charge made for the operating room or anesthesia. The physicians on the staff of the Sydenham Hospital have organized and are coöperating with this plan."

The \$100 maximum fee will include any major operation, according to Mr. Bergman. Should a second operation be needed there will be no extra charge.

The new plan will be put into effect by next Fall, Mr. Bergman said.

—*New York Times*, April 15, 1934.

CARBON DIOXIDE AND OXYGEN IN OBSTETRICS

W. T. McConnell and Roland L. McCormack, Louisville, Ky., point out that three years of oxygen administration (1928-1931) with some means of artificial respiration failed to decrease the mortality rate in the asphyxias or to overcome atelectasis, the forerunner of pneumonia. Carbon dioxide alone was obviously not used; but the use of variable mixtures of carbon dioxide and oxygen, from 5 to 30 per cent of carbon dioxide, with a full complement of oxygen, for the past two years in their practice of obstetrics and treatment of the new-born enables them to say that they have not failed to resuscitate a single asphyxia patient except one with cerebral hemorrhage and one with a congenital abnormality of the heart. They have had no atelectasis that was not easily controlled with the mixtures and have had no subsequent bronchitis or pneumonia. Similar treatment of the new-born in the obstetric service at the Louisville City Hospital, for the past year, has yielded equally good results in respect to neonatal pulmonary complications. Their routine neonatal treatment of premature infants includes the administration of 5 per cent of carbon dioxide and 95 per cent of oxygen into a tent for a few minutes three times a day. The length of time of each treatment is determined by the respiratory response of the patient, but the average is about fifteen minutes. The development of shock during anesthesia and following the emptying of the uterus is mainly due to the anesthetic or to fatigue, or to both. In the authors' private work they have adopted the plan of administering a few inhalations of carbon dioxide and oxygen immediately following the expulsion of the placenta and they have had no undue bleeding from the placental site in any of these cases in two years. In the hospital they have, for the past several months, employed carbon dioxide and oxygen inhalations as a routine in all cases of profuse bleeding from the placental site following the expulsion of the placenta. Records on twenty-five such cases show uniformly good results. Carbon dioxide and oxygen mixtures safely and promptly combat uterine inertia in the first stage of labor, and abdominal distention following cesarean section is promptly relieved.—*Journal A. M. A.*

MICHIGAN'S DEPARTMENT OF HEALTH

C. C. SLEMONS, M.D., Dr.P.H., Commissioner
LANSING, MICHIGAN

COMMUNICABLE DISEASES

During the months of May and June, typhoid fever showed some increase. Most of the cases were sporadic and scattered throughout rural Michigan. The greatest concentration of cases was in the city of Jackson and vicinity. An investigation is under way to determine the cause and to learn whether there is any common source attributable. Neither the public water supply nor any milk supply is under suspicion. Although the outbreak is apparently past, the investigation is continuing and all cases will be followed through completely.

Scarlet fever, after a season of exceedingly high prevalence, is rapidly declining as judged from the number of reported cases. The year promises to show the highest number of cases on record.

VISITORS

During June the Michigan Department of Health had six Fellow visitors from the Rockefeller Foundation. These men have been students at either the Johns Hopkins or Harvard Schools of Public Health, and have spent from two days to two weeks studying the work of the state department as well as the county health departments. With the exception of one Fellow, all visited at least three county health units.

The visitors were as follows:

Dr. R. W. Ball, Health Officer, Richland County, South Carolina
Dr. N. C. Knight, Director, Sunflower County Health Department, Mississippi
Dr. B. Newsom, Seattle Health Department
Dr. L. L. Parks, County Health Officer, Alabama State Health Department
Dr. C. J. Vaughn, Director, Holmes County Health Department, Mississippi
Dr. H. M. Johnston, Jamaica.

SUMMER CONFERENCE FOR HEALTH OFFICERS

A Summer Conference for Health Officers was held at Clear Lake, summer camp of the W. K. Kellogg Foundation, on Friday and Saturday, June 15 and 16, sponsored by the Michigan Public Health Association and with the Kellogg Foundation as host. Forty-five county, district, and city health officers and guests were in attendance.

The Administrative Aspects of Tuberculosis Control occupied the opening session on Friday morning, with special attention to the provisions of the tuberculosis law and to the results of the tuberculin testing and x-ray program that has been carried on by the Michigan Tuberculosis Association. T. J. Werle, Executive Secretary of the Association, presented the work of his organization.

At the evening session, Dr. Haven Emerson of New York, President of the American Public Health Association, was a guest and talked informally of the present poliomyelitis outbreak in California, the encephalitis epidemic in St. Louis, and the varying opinions as to the advisability of vaccinating children against tuberculosis with B.C.G. The speaker of the evening was Dr. Bruce Douglas, President of the Michigan Tuberculosis Association, who discussed the case finding program of the Association.

Everyday Problems in the Handling of Com-

municable disease, Pre-school Child Health Program, and Methods of Enlisting Community Coöperation were topics of the closing session on Saturday morning. In the discussion of undulant fever, coöperation with the State Department of Agriculture received special consideration.

CHILD HYGIENE NOTES

Dr. Ida M. Alexander has resumed her field work following an absence of six months due to a fractured femur. She has begun a series of women's classes in Huron County, where she will be located for a period of five weeks.

A five weeks' series of women's classes is being carried on in Mackinac County by Dr. Lavinia MacKaye, who is substituting for Dr. Goldie Corneliuson. At the completion of the Mackinac County classes, Dr. MacKaye will give a similar series in Iron County.

Summer programs in infant and child welfare are being carried on in Cass, Washtenaw, and Clinton Counties by staff nurses.

Martha Giltner, R.N., will complete her six months prenatal nursing service with the Kent County Health Unit July 16, and from Kent will go to Genesee for a similar program in that county.

GENERAL NEWS AND ANNOUNCEMENTS

Dr. Hugh Stalker of Detroit is spending the summer in London, England, taking special work on diseases of the heart.

Dr. L. M. Sa'di of Detroit is on a three months' European trip where his itinerary will include France, Spain and Switzerland.

Dr. Lawrence Reynolds of Detroit is in Switzerland attending the International College of Radiologists. Dr. Reynolds as editor of the *American Journal of Roentgenology* represents the national organization in this country.

One hundred forty-four new members have been added to the membership list of the Wayne County Medical Society during the past year, July 1, 1933, to June 1, 1934. In addition to this number were fifteen associates and six honorary members.

The Detroit Branch of the American Urological Society held its annual meeting in Detroit on June 20 when the following officers were elected for next year: President, Dr. Wm. E. Keane; vice president, Dr. Robert S. Breakey of Lansing; secretary-treasurer, Dr. George C. Leckie; Executive Committee, Dr. John C. Dodds of Detroit and Dr. Read Nesbitt of Ann Arbor. The afternoon was spent at the Detroit Golf Club followed by dinner at 6:30 P. M. and the scientific meeting in the evening.

Within the past month a questionnaire was sent to the members by the Elections Committee of the Wayne County Medical Society. A little over 300 replies were received. The questions and numbered replies received to them were as follows: (1) Do you wish the Wayne delegates (to the annual meeting at Battle Creek in September) to oppose the action of the Michigan House of Delegates with reference to an experimental plan of insurance? Yes, 265; No, 51. Do you wish the Wayne Delegates to use their own judgment? Yes, 144; No, 145.

The Detroit Branch of the American Urological Association held their final meeting of the season on Wednesday, June 20, 1934, at the Detroit Golf Club. Golf was played in the afternoon, followed by a dinner in the evening.

The following officers were elected for the coming year: President, Wm. E. Keane, M.D., Detroit; vice president, Robert S. Breakey, M.D., Lansing; secretary-treasurer, George C. Leckie, M.D., Detroit; Executive Committee, H. W. Plaggemeyer, M.D., Detroit; Reed Nasbitt, M.D., Ann Arbor, and John C. Dodds, M.D., Detroit.

GENESEE MEDICAL SOCIETY ENTERTAINS OAKLAND

Members of the Genesee County Medical Society were hosts to the Oakland County Medical Society June 20, with a morning program of clinics and demonstrations at Hurley Hospital and an afternoon of recreation at the Flint Country Club. About 150 physicians and surgeons attended.

Dr. Ray S. Morrish, president of the local society, was in charge of the program and the Hurley Hospital staff presented the surgical clinics and medical demonstrations. Five physicians demonstrated medical treatments and 14 performed operations. Luncheon was served at the hospital at noon.

The operation clinics were conducted by Drs. H. E. Randall, Max Burnell, Gordon L. Willoughby, George J. Curry, C. W. Colwell, W. H. Winchester, F. H. Steinman, Ray S. Morrish, William P. Boles, Arthur H. Kretchmar, L. L. Willoughby, C. P. Clark, Alvin Thompson and W. W. Stevenson. The medical demonstrations were by Drs. F. W. Baske, Lafon Jones, M. S. Chambers, Glenn E. Drewyer and W. H. Winchester, the latter two demonstrating pneumothorax treatments of pulmonary tuberculosis.—*Flint Daily Journal*.

DR. O'REILLY HONORED

Dr. William J. O'Reilly of Saginaw was honored by twenty-seven members of the staff of St. Mary's Hospital, Saginaw, who met July 3 at the doctor's home, 832 Hoyt Avenue. The occasion was Dr. O'Reilly's seventieth birthday. He was a member of the hospital staff for thirty-nine years, nine years of which he served as chief. The dinner was planned by Dr. O'Reilly's daughters Mary, Margaret and Frances and Mrs. H. T. Keim of Detroit. The toastmaster was Dr. Rockwell M. Kempton of Saginaw. Among the speakers were Dr. M. D. Ryan who recounted many interesting incidents in connection with Dr. O'Reilly's career in Saginaw, and Dr. Walter Slack who traced Dr. O'Reilly's life in photographic lantern slides from early life. The *Saginaw Daily News* commenting editorially contained the following:

"Dr. O'Reilly for many years has been one of Saginaw's outstanding physicians and not only in his service as a member and chief of the St. Mary's hospital staff but in his general practice he has won the respect and high regard of thousands of Saginaw people.

"A representative of the old school of physicians, Dr. O'Reilly has given a service to the community that is representative of the highest ideals of his profession and the tribute paid him by his fellow physicians will be echoed by the citizens of Saginaw."

The JOURNAL of the Michigan State Medical Society joins in congratulating Dr. O'Reilly and wishing him many more years of service and happiness and friendship.

UPPER PENINSULA MEDICAL SOCIETY

The thirty-seventh annual meeting of the Upper Peninsula Medical Society will be held at Ironwood, Michigan, August 16 and 17, 1934, under the auspices of the Gogebic County Medical Society. The officers for the current year are: Drs. John J.

Walch, president; Frank G. H. Maloney, vice president; Frank L. S. Reynolds, secretary. The program is as follows: "Address of Welcome"—Dr. Frank L. S. Reynolds, superintendent, Grand View Hospital; Dr. Frank G. H. Maloney, president, Gogebic County Medical Society; "Response and President's Address"—Dr. John J. Walch, president, Upper Peninsula Medical Society; "The Differential Diagnosis of Common Neurological Conditions as Met with in General Practice"—Dr. John L. Garvey, Milwaukee; "Management of Hypertension"—Dr. Charles L. Brown, Associate Professor of Internal Medicine, Ann Arbor, Michigan; "X-ray Diagnosis of Chest Lesion"—Dr. Gage Clements, roentgenologist to St. Luke's Hospital, Duluth, Minnesota; "Indications and Technic of Blood Transfusions"—Drs. John S. Lundy and Ralph M. Tovell, The Mayo Clinic, Rochester, Minnesota; "Injection Treatment of Hemorrhoids"—Dr. Walter A. Fansler, Minneapolis; "Sinus Infection—Diagnosis and Treatment"—Dr. Bert E. Hempstead, The Mayo Clinic, Rochester, Minnesota; "Allergy in General Medicine"—Dr. Charles L. Brown, Associate Professor of Internal Medicine, Ann Arbor, Michigan; "The Technic of Nerve Blocking for Various Orthopedic Operations"—Drs. John S. Lundy and Ralph M. Tovell, The Mayo Clinic, Rochester, Minnesota.

The Program Committee, Entertainment Committee and the Ladies' Entertainment Committee have provided first class programs, including golf, cards and dinners for the visiting doctors and wives. A banquet and dance will be held on Thursday evening, August 16, at which Dr. Louis J. Hirschman of Detroit will act as toastmaster. Short snappy addresses will be delivered by: Dr. C. C. Slemmons, Dr. George L. Le Fevre, Dr. F. C. Warnshuis, Dr. J. D. Bruce and Hon William Comstock.

Dr. William Donald entertained the officers of the Northern Tri-State Medical Society at the Detroit Boat Club Sunday, July 15, the object being to make arrangements for the 1935 meeting, which will be held on April 9. An invitation has been extended to approximately twenty-five prominent clinicians and surgeons for the next year's program, which will be published later in this JOURNAL. The members of the committee present were: Dr. H. E. Randall, Flint, Michigan; Dr. Kelsey, LaPorte, Ind.; Dr. W. H. Marshall, Flint, Michigan; Dr. G. O. Larson, LaPorte, Indiana; Dr. P. N. Sutherland, Angola, Indiana; Dr. Lukens, Toledo, Ohio; Dr. Cassidy, Detroit, Michigan; Mr. Burns, Detroit, Michigan; Dr. Wm. M. Donald and Dr. G. E. Jones, Lima, Ohio.

TREATMENT OF ACUTE PULMONARY ABSCESS

S. U. MARIETTA, Washington, D. C., believes that more than 50 per cent of acute pulmonary abscess cases can be brought to a satisfactory conclusion by medical treatment alone. The essential feature of medical treatment is "postural drainage." The treatment is so simple that it can be carried out in the patient's home by the general practitioner so long as adjunct measures are not required. Bronchoscopic drainage is an important adjunct to the medical treatment of acute lung abscess. The recognition of the limitations of medical treatment and the decision as to when surgery is advisable are important and responsible requirements. An appreciation of the difference between acute and chronic lung abscess is necessary in order to outline and carry out treatment properly.—*Journal A. M. A.* (April 28, 1934).

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DEPARTMENT OF SOCIETY ACTIVITY

ARTICLE 2—PURPOSE

Section 1. The purposes of this Society are to promote the science and art of medicine, the protection of public health and the betterment of the Medical Profession; and to unite with similar organizations in other States and Territories of the United States to form the American Medical Association.

SECRETARY'S VALEDICTORY

The following communication was sent to the Council on July 28, 1934, thereby terminating a service of twenty-one and one-half years as Secretary of this Society.

B. R. Corbus, M.D., Chairman,
Council of the Michigan State Medical Society,
Grand Rapids, Michigan.

Dear Doctor Corbus:

I hereby respectfully tender to you and through you to the Council my resignation as Secretary of the Michigan State Medical Society, effective September 15, 1934.

I shall arrange for an audit of the Society's funds and shall be prepared to transfer the funds and all society records on that date to whomsoever the Council designates.

It is not easy to terminate a relationship and relinquish an office that I have served for twenty-two years. I admit feelings mingled with regret and sadness. Fortune's vagaries leave me with no other course to pursue.

I am very grateful and very sincerely appreciative for the confidence and trust reposed in me during these many years. In another communication I shall endeavor to express my gratitude in fuller measure.

Awaiting the Council's instructions and assuring you I shall be helpful to my successor, I am,

Very respectfully,

F. C. WARNSHUIS, *Secretary.*

This was not an easy step to take. A residency and practice in Michigan extending over a period of thirty-two years yielded many friendships and created many relationships that were dearly prized. To sever

them and remove oneself from Michigan's environment gives rise to indescribable emotions. The decision was brought about by the attractive tender from the California Medical Association.

In relinquishing office I desire to express my very sincere appreciation for the trust that was reposed in me during these many years. My quest was not to serve one member, or a small group of members, but the entire membership—the Society as a whole.

The faithful discharge of the duties of office received first consideration. My quest at all times was to conserve and advance the membership and Society's interests. The records reveal the degree in which that policy was successful.

The citing of achievements and major activities might be justified, I shall leave such narration to others. There is one plea I should like to leave: Remain loyal to your organization, and maintain sustained interest in and support all of the Society's activities. It is your Society and it will be as valuable to you as you make it.

For my successor I bespeak wholehearted coöperating support. Few realize the tremendous amount of detail, labor and energy that the duties of office demand. Few appreciate the work involved or the time demands that devolve upon the Secretary.

Members should recognize these facts.

My successor will stand in need of your helpful and considerate assistance, for during the next year his duties are going to be extremely arduous.

I shall maintain a kindly interest in the Society's future. Its future and its activities will receive my best wishes and so—Good-bye.

F. C. WARNSHUIS.

ANNUAL MEETING

The program for the annual meeting in Battle Creek, September 11 to 13, will be found in this issue. Members will undoubtedly agree that this program will create a desire to attend. The two days of scientific addresses will be very instructive and profitable to every doctor. The guest speakers are outstanding in their special fields of medicine.

All sessions will be held in the W. K. Kellogg Auditorium. This building is conveniently located near the two leading hotels. The Scientific and Commercial Exhibits will be of exceptional interest.

Delegates are requested to secure their credentials from their county secretary and present them to the Credentials Committee at 9:00 a. m. on the morning of September 11.

The Calhoun County profession have planned several entertainments and are eager to accord you their hospitality.

Turn to the program, note the dates, write for your hotel reservations and plan to attend.

POST-GRADUATE OPPORTUNITIES

Our Society has been a pioneer in providing opportunities for postgraduate work for our members in their own state. There has been a constant expansion of the program. The quest has been to meet the wishes of our members. It is in conformity to that policy that the following announcement is made of further expansion.

Members are urged to embrace this new offering.

Announcement

In order to provide more convenient opportunities for a high type of postgraduate study for the practitioner of general medicine, the following plan for intensive courses in medicine, surgery and their branches has been arranged through the

establishment of three additional teaching centers.

In each of these three centers—Flint, Grand Rapids, and Battle Creek-Kalamazoo, jointly, a course of instruction of one day (five hours) each week for eleven weeks is provided beginning the first week in October. Case presentations and didactic teaching will occupy the hours 10:00 to 12:00 in the morning, and 1:00 to 3:00 in the afternoon. Following the afternoon period an hour will be devoted to general discussions. The early part of the discussion will be limited to questions raised by the preceding presentations, while the latter part will be devoted to problems of personal interest to any member of the class.

The program is identical for each center, consisting of case demonstration and bedside clinics in traumatic and emergency surgery, fractures, cardiology, metabolic diseases, gynecology and obstetrics, pulmonary disease, gastroenterology and pediatrics.

In order that adequate clinical material may be provided it is important that physicians register at an early date and with the view of being present throughout the entire course of study, giving preference to the particular city in which they wish to be enrolled.

This arrangement offers an opportunity for practical instruction in diagnosis and in the recent advances in each field at a minimum loss of time from practice.

For further information and program in detail, address: Department of Post Graduate Medicine, University Hospital, Ann Arbor, Michigan.

I. Diseases of the Heart and Circulatory System

Morning

- 10:00 A study of the types of heart disease by case demonstration, with emphasis on the recognition of physical signs, the signs and symptoms of heart failure, and the treatment of various types of heart disease.
- 12:00 Luncheon.

Afternoon

- 1:00 Program continued.
- 3:00 Discussion.

II. Diabetes Mellitus

Morning

- 10:00 In this period a thorough discussion of the principles of treatment of diabetes mellitus will be given, formulating a practical and interesting method of managing this large group of patients in office practice. The indications for insulin, preparation of the diabetic for surgery, and the complications, including coma, will be stressed.
- 12:00 Luncheon.

Afternoon

- 1:00 Program continued.
3:00 Discussion.

III. Gastroenterology*Morning*

- 10:00 Differential Diagnosis and Treatment of Functional and Organic Gastrointestinal Disease.
12:00 Luncheon.

Afternoon

- 1:00 Diseases of Colon and Ano-rectal Diseases.
3:00 Discussion.

IV. Psychiatry*Morning*

- 10:00 The Importance of the History and Examination of the Psychiatric Patient, the Recognition of the Major Insanities, and their Differentiation from the Psychoneuroses, Anxiety States, Compulsions, Phobias and Hysteria.
12:00 Luncheon.

Afternoon

- 1:00 Diagnostic Procedures and Laboratory Methods Necessary in the Recognition of Central Nervous System Disease.
3:00 Discussion.

V. Fractures*Morning*

- 10:00 Fractures of the Extremities.
12:00 Luncheon.

Afternoon

- 1:00 Fractures of Skull and Spine.
3:00 Discussion.

VI. Traumatic and Emergency Surgery*Morning*

- 10:00 Diagnostic Problems of the Acute Abdomen. Infections of the Hand.
12:00 Luncheon.

Afternoon

- 1:00 Factors of Importance in Estimating Surgical Risk, Pre-operative and Post-operative Care, and Recognition and Treatment of Shock.
3:00 Discussion.

VII. Gynecology and Obstetrics*Morning*

- 10:00 Complications of Pregnancy.
12:00 Luncheon.

Afternoon

- 1:00 The Cause and Treatment of Amenorrhea, Menorrhagia, Metrorrhagia, and Cancer of Cervix.
3:00 Discussion.

VIII. Pediatrics and Infectious Diseases*Morning*

- 10:00 Infant Feeding.
12:00 Luncheon.

Afternoon

- 1:00 Contagious Diseases, Complications, and Their Treatment.
3:00 Discussion.

IX. Pulmonary Tuberculosis and Other Thoracic Diseases*Morning*

- 10:00 Differential Diagnosis of Pulmonary Tuberculosis and Non-tuberculous Pulmonary Disease, with the Importance of the X-ray in Diagnosis and in Determining Activity.
12:00 Luncheon.

Afternoon

- 1:00 Indications for Collapse Therapy with Surgical Procedures.
3:00 Discussion.

X. Syphilology and Dermatology*Morning*

- 10:00 Problems and Methods in the Treatment of Syphilis.
12:00 Luncheon.

Afternoon

- 1:00 Clinical Demonstration of Dermatological Lesions and Their Treatment.
3:00 Discussion.

XI. Arthritis*Morning*

- 10:00 Differential Diagnosis of Various Types of Arthritis According to Etiology and Pathology, and Various Therapeutic Agents Used in Their Treatment.
12:00 Luncheon.

Afternoon

- 1:00 Mechanical and Surgical Considerations of Arthritis and Other Deforming Joint Conditions.
3:00 Discussion.

CHANGE OF HEADQUARTERS

The Council has designated Dr. B. R. Corbus as Acting Secretary of the Society.

On and after September 1, 1934, all communications relative to Society business, membership, advertising, etc., should be addressed to

B. R. Corbus, M.D.,
Acting Secretary,
309-11 Metz Bldg.,
Grand Rapids, Mich.

County Secretaries are particularly requested to note this change of address.

On and after October 1 Dr. Warnshuis' address will be Room 2004, 450 Sutter Street, San Francisco, Calif.

ANNOUNCEMENT

On invitation of the Committee on Preventive Medicine, the Michigan Tuberculosis Association, the State Sanatorium, and the State Department of Health are preparing for booth number twenty-two a demonstration of tuberculosis, Schick, and other tests. There will also be on display an exhibit on x-ray pictures demonstrating types of operative collapse of lungs in the treatment of tuberculosis.

MEDICAL ETHICS AND NEW METHODS OF PRACTICE

Gradual changes in the nature of our civilization have brought ever more complex problems for solution by the medical profession. As has been stated repeatedly in these columns, the ethical principles which guide medicine are fundamentally so sound that they may be adapted to any situation arising in medical practice provided those concerned wish to observe the spirit of these principles. Nevertheless, physicians involved in new types of organization, such as contract practice, industrial practice, hospital practice, university practice, and the practice of medicine by lay corporations which employ physicians, have been brought before the judicial councils and committees on ethical relations of various medical bodies, because of infringements of these ethical principles. In some cases there have apparently been difficulties of interpretation. To overcome these difficulties, the Judicial Council of the American Medical Association, at the Cleveland session, presented three amendments to the Principles of Medical Ethics. These were heartily endorsed by the Reference Committee on Amendments to the Constitution and By-Laws and then adopted by the House of Delegates as guiding principles for organized medicine.

The term "contract practice" is anathema to the vast majority of individual practitioners in this country, yet contracts of all kinds are matters of daily life in all forms of industry. Conceivably there are situations in which the practice of medicine under a contract may be necessary or desirable. In order to elucidate this phase of medical practice, the Principles of Medical Ethics, chapter II, article V, section 2, is now amended by addition of the following wording:

By the term "contract practice" as applied to medicine is meant the carrying out of an agreement between a physician or a group of physicians, as principals or agents, and a corporation, organization or individual, to furnish partial or full medical services to a group or class of individuals for a definite sum or a fixed rate per capita.

Contract practice *per se* is not unethical. However, certain features or conditions if present make a contract unethical, among which are: 1. When there is solicitation of patients, directly or indirectly. 2. When there is underbidding to secure the contract. 3. When the compensation is inadequate to assure good medical service. 4. When there is interference with reasonable competition in a community. 5. When free choice of a physician is prevented. 6. When the conditions of employment make it impossible to render adequate service to the patients. 7. When the contract because of any of

its provisions or practical results is contrary to sound public policy.

Each contract should be considered on its own merits and in the light of surrounding conditions. Judgment should not be obscured by immediate, temporary or local results. The decision as to its ethical or unethical nature must be based on the ultimate effect for good or ill on the people as a whole.

Group practice and clinical practice are also phases of medical work that have aroused opposition in many communities, because of the introduction of advertising methods and commercial promotion into their work. In some places groups or clinics have employed business managers, unfamiliar with the medical point of view, who have attempted to introduce unprofessional methods into medical practice. In order to establish the proper relationship between groups and clinics with the individual practice of medicine, the Principles of Medical Ethics will now contain the following statement:

The ethical principles actuating and governing a group or clinic are exactly the same as those applicable to the individual. As a group or clinic is composed of individual doctors, each of whom, whether employer, employee or partner, is subject to the principles of ethics herein elaborated, the uniting into a business or professional organization does not relieve them either individually or as a group from the obligation they assume when entering the profession.

Regardless, however, of the damage wrought to scientific medicine by physicians who engage in contract practice or by groups of physicians competing with the individual practitioner, the worst possible type of new methods in medical practice is the incorporation by business men of organizations to engage in the practice of medicine, employing physicians on salaries and exploiting the services of these physicians unethically to the public. The most conspicuous example of such an organization is the United Medical Service, Inc., which began a few years ago to advertise its services to the people of Chicago. Regarding such types of medical practice, the Judicial Council was definite. The Principles of Medical Ethics now contains the following statement:

It is unprofessional for a physician to dispose of his professional attainments or services to any lay body, organization, group or individual, by whatever name called, or however organized, under terms or conditions which permit a direct profit from the fees, salary or compensation received to accrue to the lay body or individual employing him. Such a procedure is beneath the dignity of professional

practice, is unfair competition with the profession at large, is harmful alike to the profession of medicine and the welfare of the people, and is against sound public policy.

As was stated in the introduction to these comments, these modifications of the Principles of Medical Ethics do not in any way modify the basic character of these principles. The Principles of Medical Ethics was established for the protection of the public primarily. Methods of promotion that sell medical practice on the basis of exaggerated claims, on a fee basis rather than the quality of service rendered, methods of practice that break down the intimate personal relationship that must exist between doctor and patient; methods that delegate the responsibility of the attending doctor to a group or a corporation or a business manager, carry with them a menace to the life and health of the people who are served.

Physicians will do well to familiarize themselves with these new statements of principle, now a part of the ethics of organized medicine. The young physician who is tempted by the offer of some commercial agency to enter into such schemes or combinations should bear in mind that he thereby jeopardizes his entire future in the practice of medicine and sacrifices the medical birthright for which he has already paid six or seven years of his life.—*Jour. A. M. A.*

MINUTES OF THE EXECUTIVE COMMITTEE OF THE COUNCIL OF THE MICHIGAN STATE MEDICAL SOCIETY

The Executive Committee of the Council met in Muskegon on August 1, 1934, with the following members present:

Chairman Corbus, Carstens, Boys Baker, Cook, President LeFevre, President-Elect R. R. Smith, Councilor Treynor and Doctors J. B. Bradley and Philip Riley of the Legislative Committee, also Past President Carl Moll and the Secretary.

1. The Secretary reported that he had transmitted the action of the Executive Committee held one month ago, requesting the Economics Committee to have its report in the hands of the Secretary not later than August 10 for printing and distribution to the Delegates at least two weeks before the meeting of the House of Delegates. Councilor Baker, member of the Economics Com-

mittee, reported upon the progress that was being made. The Secretary was instructed to place all the facilities of his office at the disposal of this committee to expedite its work.

2. The Secretary presented a communication from Mr. Barbour, Legal Counsel, upon the liabilities of the Society for members who were in arrears with their dues and also for members joining the Society during some portion of the fiscal year. The Secretary was instructed to prepare amendments, incorporating this information in the By-Laws of the Society for presentation to the House of Delegates.

3. The Secretary presented the financial statement of the Society's condition. The Secretary was instructed to prepare a list by counties of those members who had given notes for their dues and which notes still remain unpaid and to have this list available for the Council at its meeting in Battle Creek.

4. The Secretary reported upon the arrangements and program that were being perfected for the annual meeting in Battle Creek. These were approved.

5. Upon motion of Boys-Carstens the Secretary was directed to send out notices that the Council would convene at a dinner session in the W. K. Kellogg Hotel in Battle Creek at 7:00 p. m. on September 10.

6. Dr. J. B. Bradley, chairman of the Legislative Committee, reported upon the activities of his committee and made several suggestions as to further policies to be observed. The committee was commended for its activities and was instructed to continue with its program.

7. The Chairman presented a communication from Dr. Bruce requesting an appropriation of \$1,500 to aid in defraying the expenses of Regional Post Graduate Clinics during the coming winter. Upon motion of Carstens-Boys this request was referred to the entire Council to be considered at the Battle Creek meeting.

8. The Chairman of the Council presented the resignation of the Secretary to take effect on September 15, 1934. Upon motion of Cook-Boys the resignation was accepted. Upon motion of Cook-Boys the Chairman was instructed to appoint a committee of three who shall prepare a suitable statement setting forth the services of the retiring Secretary and present the same for consideration and action at the Battle Creek meeting of the Council.

9. The Executive Committee devoted considerable time in lengthy discussion as to the policy that shall be pursued in the selection of a successor to the Secretary. Upon motion of Cook-Boys the Secretary was directed to prepare a letter which is to be sent immediately to each Councilor setting forth the suggestion that pending the election of a new Secretary that the Chairman of the Council act as Secretary.

10. Upon motion of Cook-Boys the Chairman of the Council was authorized to receive and accept the records, funds and properties of the Society when the Secretary relinquishes his office, pending action by the Council.

The Executive Committee adjourned at 11:05 p. m.

Signed: F. C. WARNSHUIS, *Secretary*.

PREVENTIVE MEDICINE

Joint meeting of the Preventive Medicine Committee of the Michigan State Medical Society with the Michigan Tuberculosis Association was held in Lansing Friday, July 13, 1934.

Members present: Chairman Geib, Byington, Holmes, O'Meara, Eckland, and Miner. Guest, Dr. H. Vaughan. Officers and members of the Michigan Tuberculosis Association, Drs. Douglas, Sundwall, Shepard, and Mr. Werle.

Dr. Douglas opened the discussion with explanation of the Association's present method of case finding. The films are sent to Dr. Evans of Detroit for development and reading. He is paid 15¢ per film, to date 4,800 films at a cost of \$7,000 or approximately \$1.60 per x-ray.

As applied to Medical Participation:

1. Local physicians can be taught to do skin testing and are paid \$2.50 per hour or \$15.00 per day.
2. Local x-rays have not proved satisfactory.

Motion made: That a joint Committee of three (3) members from the Michigan Tuberculosis Society and three (3) members from the Preventive Medicine Committee be appointed to study a definite plan for a state campaign of tuberculosis case finding and report back to this group. Carried.

Motion made: That the Preventive Medicine Committee petition the Exhibition Committee for a free booth at the annual meeting of the Michigan State Medical Society for the Michigan Tuberculosis Society. Carried.

Joint meeting adjourned.

Members of the Michigan Tuberculosis Society took their leave and the meeting of the Preventive Medicine Committee was called to order.

Minutes of the last meeting were read and approved.

There was a lengthy discussion regarding the various angles of the District Plan which was proposed at the Muskegon Meeting.

Motion made: That Drs. Byington and Geib formulate an outline for the various District Chairmen to use for the coming district meetings. Carried.

The meeting adjourned.

(Signed) FREDERICK B. MINER, *Secretary*.

COUNTY SOCIETIES

CASS COUNTY MEDICAL SOCIETY

A joint meeting of the Berrien-Cass County Medical Society with the Berrien County Bar Association, was held July 18, 1934, at the Berrien Hills Country Club. The meeting was called to order by Victor M. Gore, president of the Berrien County Bar Association. The Berrien-Cass County Medical Societies were welcomed and the following resolution in memory of Dr. C. N. Sowers, who died yesterday morning, was unanimously adopted.

WHEREAS, an allwise God has deemed best to withdraw from our presence a Medical Man, who has given his life in his chosen profession, one who has always held the respect of his fellow practitioners, one who has held the heartfelt respect of his community, one who has been an active worker and teacher in Medical Science.

THEREFORE, BE IT RESOLVED, that the Berrien County Medical Society and the Berrien County Bar Association, in joint meeting, express their sorrow to the family and the Secretaries of the combined professions express to the family and spread on the minutes of their respective Societies this resolution.

Doctors Mitchell, Witt and Mr. Gore eulogized his memory. The meeting was then turned over to the Berrien County Medical Society for a short business meeting in which the schedule for the Michigan Crippled Children's Commission was accepted, having been previously accepted by the staffs of both hospitals.

A letter from Doctor Morrill asking for reinstatement of membership from his leave of absence, was referred to the Membership Committee. Richmond appointed a Resolutions Committee, consisting of Doctors Witt (Chairman), Ellet and Hanna to report at the August meeting. The meeting was then turned back to Mr. Gore. Mr. Roscoe Bonisteel gave a very interesting address on the "Integration of the Bar," and drew a parallel between the problems of the medical profession and the legal profession. At the conclusion of his speech, the meeting was adjourned.

We note with pleasure the presence of Dr. C. E. Boys, the Councilor for this district, who spoke profusely in support of the schedule for the Michigan Crippled Children's Commission, upon request.

OFFICIAL PROGRAM

114th Annual Meeting, Michigan State Medical Society

September 11, 12 and 13, 1934

W. K. Kellogg Auditorium, Battle Creek, Michigan

OFFICIAL CALL

The Michigan State Medical Society will convene in annual session in Battle Creek on September 11-12-13, 1934. The provisions of the Constitution and By-laws and the official program will govern the deliberations.

GEORGE L. LEFEVRE, *President*
B. R. CORBUS, *Chairman Council*
H. A. LUCE, *Speaker*

Attest:

F. C. WARNSHUIS, *Secretary*

MEETING PLACE

All sessions will be held in the W. K. Kellogg Auditorium.

GENERAL MEETING

Wednesday Morning, September 12, 11:00 A. M.
Main Auditorium

Presiding: GEORGE L. LEFEVRE, President—Muskegon

1. Invocation.
2. Welcome, Address—A. E. McGregor M.D., President Calhoun County Medical Society.
3. General Announcements—F. C. Warnshuis, Secretary.
4. President's Annual Address—George L. LeFevre, Muskegon.
5. Address—(Invited Guest).
6. Address—W. L. Bierring, M.D., President American Medical Association, Des Moines, Ia.
7. Induction into Office of President-elect Richard R. Smith, Grand Rapids.
8. Adjournment.

Note: The public is invited to attend this general meeting.

SECTION PROGRAMS

General Medicine

Chairman: C. C. STURGIS, Ann Arbor.

Secretary: MERRILL WELLS, Grand Rapids.

First Session—Wednesday Morning, Sept. 12, 1934
9:00 A. M.

1. Chairman's Address—"An Appraisal of the Therapeutic Methods Used in the Treatment of Lobar Pneumonia"—C. C. Sturgis, Ann Arbor.
2. "The General Practitioner as His Own Neurologist"—Hugo Freund, Detroit.

Discussion—

1. I. W. Greene, Owosso.
2. F. P. Currier, Grand Rapids.
3. J. T. Sample, Saginaw.
3. "Edema and Ascites"—William A. Thomas, Chicago.

Discussion—

1. M. A. Mortensen, Battle Creek.
2. R. L. Novy, Detroit.
3. Richard M. McKean, Detroit.
4. Address of the President of the Michigan State Medical Society before all Sections at 11 A. M.

Second Session—Thursday Morning, Sept. 13, 1934
9:00 A. M.

1. "Agranulocytic Angina"—W. H. Gordon, Detroit.

Discussion—

1. C. C. Sturgis, Ann Arbor.
2. Milton Shaw, Lansing.
2. "Peptic Ulcer: A Consideration of the Factors of Chronicity and a Critique of Methods of Treatment"—Charles L. Brown, Ann Arbor.

Discussion—

1. E. L. Eggleston, Battle Creek.
2. B. R. Corbus, Grand Rapids.
3. "Surgery in the Management of Heart Disease"—E. C. Cutler, Professor of Surgery, Harvard Medical School, Boston, Mass.
4. "The Detection of Early Tuberculosis"—H. S. Willis, Northville, Michigan.

Discussion—

1. John Barnwell, University Hospital, Ann Arbor.
2. Salvatore Lojano of Morgan Heights Sanatorium, Marquette.

Surgery

Chairman: EARL I. CARR, Lansing.

Secretary: H. K. SHAWAN, Detroit.

First Session—Wednesday, Sept. 12, 1934
9:00 A. M.

1. Chairman's Address—Earl I. Carr, Lansing.
2. "Tannic Acid Treatment of Burns"—Grover C. Penberthy, Detroit.
3. "Treatment of Facial Wounds Due to Automobile Accidents"—L. Claire Straith, Detroit.

Discussion—

Ferris Smith, Grand Rapids.

4. "Fracture of the Lower Extremity"—Peter A. Bendixen, Davenport, Iowa.

Discussion—

1. George J. Curry, Flint.
2. Clifford B. Brainard, Battle Creek.
5. Adjourn for President's Address at 11 A. M.

Second Session—Thursday, Sept. 13, 1934
9:00 A. M.

1. "Lesions of the Esophagus"—Roy D. McClure, Detroit.

Discussion—

1. William A. Hudson, Detroit.
2. John Alexander, Ann Arbor.

2. "Intestinal Fistulae"—Frederick A. Coller and H. K. Ransom, Ann Arbor.
Discussion—
1. Julius H. Powers, Saginaw.
2. Alexander J. MacKenzie, Port Huron.
3. "Peri-anal Suppuration as a Focus of Infection"—Louis J. Hirschman, Detroit.
Discussion—
1. Karl B. Brucker, Lansing.
2. G. M. Brown, Bay City.
4. "The Treatment of Cerebro-cranial Injuries"—Loyal Davis, Chicago.
Discussion—
1. Max M. Peet, Ann Arbor.
2. John J. Walch, Escanaba.
3. E. S. Gurdjian, Detroit.

Gynecology and Obstetrics

Chairman: HAROLD FURLONG, Pontiac.
Secretary: HAROLD MACK, Detroit.

First Session—Wednesday Morning, Sept. 12, 1934
9:00 A. M.

1. Report of Committees on—
(a) Clinical Problems—Dr. Miller.
(b) Birth Certificates—Dr. Alles.
(c) Birth Control—Dr. Mack.
2. Chairman's Address.
3. "The Value of the Potter Type of Internal Podalic Version in the Management of Persistent Posterior Occiput Cases"—Morrell M. Jones, Pontiac.
4. "Abdominal Pregnancies"—Cleary N. Swanson, Detroit.
5. "Some Phases of the Conduct of Labor"—Joseph L. Baer, Chicago.
6. Recess and Discussion.
7. Adjourn for Address of President, Michigan State Medical Society at 11:00 A. M.

Afternoon Session

Combined Section Meeting.

Second Session—Thursday, Sept. 13, 1934
9:00 A. M.

1. "Treatment of Trichomonas Vaginalis"—J. Campbell Smith, Detroit.
2. "Late Studies on Roentgenography of Pelvic Organs"—J. Duane Miller and Dr. Meness of Grand Rapids.
3. "The Relation between Adenocarcinoma of the Body and Fibroid Tumors"—George Sehring, Department of Obstetrics and Gynecology, University of Michigan.
4. "Excessive Cigarette Smoking in Women and Its Effect upon Their Reproductive Efficiency"—Alexander M. Campbell, Grand Rapids.
5. "The Management of Occiput Posterior"—W. C. Danforth, M.D., Evanston, Ill.

Abstract of paper—
Occiput posterior is one of the most common complications of obstetric practice. Improper management of occiput posterior is responsible for many maternal injuries and neo-natal deaths. Many procedures have been recommended for the management of labors complicated by this condition. These are briefly discussed. Particular attention is paid to occiput posterior and a method for accomplishing this, which has been used by the essayist, is described. Personal experience and results are given.

6. Round Table Discussion in Obstetrics. Discussion led by Dr. W. C. Danforth, Associate Professor of Obstetrics and Gynecology, Northwestern University.

Physicians desiring questions answered or clinical problems discussed during the Round Table period are requested to forward their names and the subject for discussion to the section chairman or secretary during the meeting previous to the Round Table Discussion.

7. Election of Officers.

Afternoon Session

Combined Section Meeting.

Ophthalmology and Otolaryngology

Chairman: John R. Rogers, Grand Rapids.
Secretary: RALPH B. FAST, Kalamazoo.

First Session—Wednesday, Sept. 12, 1934
9:00 A. M.

OPHTHALMOLOGY

1. "Some of the Newer Developments in the Practice of Ophthalmology"—Conrad Berens, M.D., New York City.

The plan of the program has been changed slightly this year and our time for this session has been limited to two hours.

A general session of all sections is called for 11 A. M. on this day.

Dr. Berens will discuss the following subjects:

1. One-half hour on Orthoptic Training.
2. About twelve minutes on Ocular Fatigue.
3. Ten minutes on Telescopic Lenses.
4. Five minutes on Contact Lenses.
5. About ten minutes on Anisekonion.
6. About one-half hour on Operations for Detachment of the Retina and Chronic Infections of the Eye.

The remaining time, about one-half hour, will be given over to General Discussion.

2. Round Table Discussion after luncheon conducted by Dr. Berens.

Second Session—Thursday, Sept. 13, 1934
9:00 A. M.

OTOLARYNGOLOGY

1. "Temporal Lobe Abscess of Otitic Origin"—Oliver B. McGillicuddy, Lansing.

A brief discussion of the type of infection that results in abscess of the temporal lobe with consideration of the clinical signs, various methods of approach and the ultimate prognosis of such cases. Case reports of two recent patients treated simultaneously with recovery, will be used to illustrate the paper.

Discussion—

1. A. C. Furstenberg, Ann Arbor.
2. Carl Snapp, Grand Rapids.
2. "The Value of Prophylactic Methods in the Prevention of Common Colds"—Perrin Hamilton Long, Johns Hopkins Hospital, Baltimore, Md.

There can be no question of the enduring widespread public interest in the prevention of colds. During the past fifty years numerous remedies and methods have been advanced as specifics in the prophylaxis of upper respiratory tract infection. Cocaine hydrochloride, bicarbonate of soda, hardening exercises, oral antiseptics, vaccines and finally vitamins and ultra violet light have had their supporters and with the exception of the last two measures, have failed to gain any extensive group of adherents.

It will be our purpose in this paper to discuss the experimental background and the clinical applications of vitamin therapy, the use of ultra violet light and bacterial vaccines in prophylaxis of common colds. On the experimental side there is unquestionable evidence that Vitamin A is essential if small laboratory animals such as rats and guinea pigs are to be maintained in a state which will permit them to resist the

infections endogenous to such animals. There is also very definite evidence as to the bactericidal and viricidal effects of ultra violet light in *in vitro* experiments. However, when these methods of prophylaxis are carried over to man the results are debatable.

In the later stages of common colds it is the rule to find many bacteria in the nasal secretions. It is generally supposed that these organisms contribute to the symptomatology of the disease and hence that bacterial vaccines are of value in the prophylaxis of colds. It is our opinion that these organisms play little, if any, rôle in the infectious process. Evidence in support of this belief will be presented.

Discussion—

1. James Maxwell, Ann Arbor.
2. Carl G. Wencke, Battle Creek.
3. "The Rhinological Management of the Allergic Individual"—James E. Croushore, M.D., Detroit Polyclinic, Detroit, Mich.

Discussion is made of the procedure for proper diagnosis. Local treatment for hyperesthetic rhinitis is essentially valueless and generally prolonged because of faulty diagnosis. The treatment of allergic rhinitis complicated by polypoid degenerations, sinus disease and malformations is given detailed attention from the allergic and rhinological standpoints.

Discussion—

1. Samuel J. Levin, Detroit.
2. Clifford Brunk, Detroit.
4. "Headache"—J. Milton Robb, Detroit.

It is unfortunate that the most common symptom that brings the patient to the doctor's office—headache—receives so little discussion. It is a subject in which every man in every field of the practice of medicine should be vitally interested.

In our discussion, we shall not treat of the headache lasting for several days, which is a part of the onset of acute disease. We are interested in the chronic or recurrent type, the analysis of which depends upon a concise, definite plan of attack.

Discussion—

1. Edgar Kahn, Ann Arbor.
2. Frederic Schrieber, Detroit.

Pediatrics

Chairman: W. E. COLLINS, Kalamazoo.

Secretary: EDGAR E. MARTMER, Detroit.

First Session—Wednesday, Sept. 12, 1934 9:00 A. M.

1. Address of Chairman—Ward Collins, Kalamazoo.
2. "Vomiting in Infancy"—
Discussion—
1. Thomas Gordon, Grand Rapids.
2. Henry Vanden Berg, Grand Rapids.
3. David J. Levy, Detroit.

Second Session—Thursday, Sept. 13, 1934 9:00 A. M.

1. "Physiological Postural Deformities in Contrast to Pathological Postural Deformities"—C. E. Badgley, Ann Arbor.
2. "Infantile Eczema"—George Van Rhee, Detroit.
A discussion of the etiology, pathology, diagnosis and treatment of infantile eczema with particular attention to the differential diagnosis of infantile eczema, seborrheic dermatitis and erythroderma exfoliativa. Lantern slides.
3. "Pyelitis in Infancy and Childhood"—W. K. Rexford, Detroit.
A review of a series of cases followed at the Children's Hospital of Michigan for the past three years. Anomalies of the urinary tract and other cystoscopic findings. Lantern slides.
4. "Sinus Disease in Childhood"—Ferris Smith, Grand Rapids.

The incidence of sinus disease in children is greater than is generally recognized. It is particularly prevalent in Michigan. Dr. Smith's wide experience in the treatment of sinus disease in children makes this a very worth while paper.

5. "Conditions in Childhood Associated with Hypoglycemia"—W. McKim Marriott, Dean of Washington University, School of Medicine, St. Louis, Missouri.

Discussion—

Thomas B. Cooley, Detroit.

Dermatology and Syphilology

Chairman: ROBERT C. JAMIESON, Detroit.

Secretary: A. R. WOODBURN, Grand Rapids.

First Session—Wednesday, Sept. 12, 1934 9:00 A. M.

1. Chairman's Address—R. C. Jamieson, Detroit.
2. "Skin Disease in Industry"—A. E. Schiller, Detroit.
3. "Immunological Aspects of Epidermophytosis"—L. W. Shaffer.
4. "Allergy in Dermatology"—M. B. Sulzberger, New York.

Second Session—Thursday, Sept. 13, 1934 9:00 A. M.

Presentation of Cases.

COMBINED SECTION MEETINGS

Note: All Scientific Sections will meet in combined general meeting on Wednesday and Thursday afternoons at 1:15 P. M. There will be no discussion of the following program.

First Combined Session

Wednesday, Sept. 12, 1934
1:15 P. M.

Main Auditorium

1. "Allergic Dermatoses"—Marion B. Gulzberger, New York City.
A tentative classification based upon (a) the site of shock tissue, and (b) the lapse of time between union of allergen with sensitive tissue and the appearance of reaction. The deductions which may be made from such a classification:
(1) regarding the various types of sensitization dermatoses;
(2) the specific substances which must be suspect in each type;
(3) the special technic of testing which is indicated in each type;
(4) the therapy of each type.
2. "Individualizing Anesthesia"—Reuben Maurits, Grand Rapids.
3. "Acute Hepatic Insufficiency with Special Reference to Liver Tests and Therapy"—William A. Thomas, Chicago, Ill.
4. "Fibroids of the Uterus"—Joseph L. Baer, Chicago, Ill.

One thousand one patients were treated for fibroids of the uterus during the past eleven years. The frequency of total and vaginal hysterectomies has shown a continuing increase while irradiation has shown a marked decline.

The selection of radium as the treatment for fibroids has steadily diminished because of the increasingly long list of direct contra indications, the undesirability of a precipitate menopause and the inability to examine the pelvic and abdominal viscera.

The total mortality in this series was 0.7 per cent (seven deaths). In the second group of 474 patients it was 0.21 per cent (one death).

Partial or complete removal of the adnexa was done in 50 per cent of the patients. Indications for these operations on the adnexa included not only pathology, but mechanical reasons and prophylaxis.

No evidence was found to justify the conclusion that fibroids result from ovarian pathology.

Absolute sterility was present in 19.3 per cent. Fibroids play little or no rôle in the production of absolute sterility.

Pelvic malignancy was found in 1 per cent.

5. Clinico-Pathological Conference conducted by F. W. Hartman, Detroit.

Second Combined Session

Thursday, Sept. 13, 1934

1:15 P. M.

1. "The Common Cold"—Perrin Hamilton Long, Baltimore, Md.

It has been estimated that colds cost the people of the United States two billion dollars a year. The economic importance alone of such a disease is manifest.

Although many theories as to the causation of colds had been advanced no real progress was made until Kruse announced in 1914 that he had produced colds in human volunteers by intranasal inoculations with Berkefeld filtrates of the nasal secretions from individuals ill with natural colds. During the next ten years the observations of Kruse were confirmed and denied by several investigators. In the last decade, however, the investigations of Dochez and his associates and the results of our own observations have demonstrated quite conclusively that the causal factor in common colds is a filterable agent. Dochez has been able to propagate this agent in a tissue medium through many generations.

Colds occur in epidemic peaks throughout the year with the highest incidence being reached in the early fall. The average individual suffers from three infections a year. The highest attack rates occur in children under five years of age. Contact with an infected person, food, or fomites is essential for the production of the disease. Completely isolated communities are free from colds. The occurrence of abnormalities of the upper respiratory tract does not predispose an individual to colds and the removal of these abnormalities does not necessarily decrease the incidence of upper respiratory tract infection. No durable immunity has been demonstrated following an infection.

Colds are protean in their manifestation, ranging from mild nasal infections to severe respiratory tract involvement with constitutional symptoms. There is no distinct boundary by which we can delimit colds from influenza. The factors governing the type of infection suffered by an individual have not as yet been elucidated.

Bacterial vaccines, vitamin containing preparations, ultra violet radiation and many other methods of prophylaxis have at best given indifferent results. There is no reliable cure for a cold and the best treatment is for the infected individual to remain in bed during the first seventy-two hours of his infection.

2. "Pre-operative and Post-operative Treatment of the Toxic Thyroid Patient"—E. C. Cutler, Boston, Mass.
3. "Hematuria"—Wm. J. Butler, Grand Rapids.
4. "Treatment of the Diarrheas of Infancy"—McKim Merriott, St. Louis, Mo.
5. "Surgical Treatment of Intractable Pain"—Loyal Davis, Chicago, Ill.
6. "Tannic Acid Treatment of Burns"—Grover C. Penberthy, Detroit.

WOMAN'S AUXILIARY

PROGRAM FOR MEDICAL AUXILIARY CONVENTION

September 11, 12, 13, 1934

Headquarters—Battle Creek Sanitarium

Tuesday, Sept. 11, 1934

Registration, Main Lobby, Sanitarium, from 3:00 P. M. to 6:00 P. M.

Wednesday, Sept. 12, 1934

Registration, Main Lobby, Sanitarium, from 10:00 A. M. to 6:00 P. M.

12:30—Noon—Kellogg Hotel. Luncheon for Board Members and County Presidents. Round table discussion.

2:30 P. M. to 5:00 P. M. Sightseeing trips. Golf.

7:00 P. M. BRING YOUR HUSBAND dinner.

Thursday, Sept. 13, 1934

Registration 8:00 A. M. to 12:00 Noon.

10:00 A. M. General Meeting. Mezzanine, Sanitarium.

Reading of Minutes.

Reports of Officers.

Reports of Committees.

Report of National Convention.

Reports of County Presidents.

Address of President.

Miscellaneous Business.

Election of Officers.

12:30. Luncheon, Main Dining Room, Sanitarium. Mrs. G. Henry Mundt from Chicago, Illinois, speaking on "Greetings from the Advisory Board."

HOUSE OF DELEGATES

Speaker: H. A. Luce, Detroit.

Vice Speaker: Frank E. Reeder, Flint.

Secretary: F. C. Warnshuis, Grand Rapids.

First Session

Tuesday, September 11, 1934, 9:30 A. M.

W. K. Kellogg Auditorium

1. Call to Order.
2. Report of Credentials Committee.
3. Roll Call of Delegates.
4. Speaker's Address.
5. President's Address.
6. President-Elect's Address
7. Annual Report of the Council.
8. Appointment of Reference Committees.
 - (a) Council's Reports.
 - (b) Society Business.
 - (c) Miscellaneous Business.
 - (d) Reports of Committees.
9. Committee Reports:
 - (1) Legislation.
 - (2) Woman's Auxiliary.
 - (3) Radio Committee.
 - (4) Preventive Medicine.
 - (5) Delegates to A. M. A.
 - (6) Maternal Welfare.
 - (7) Therapeutics.
 - (8) Cancer Committee.
10. Report of Committee on Economics.
11. Resolutions. (All resolutions are to be presented in triplicate.)
12. New Business.
13. Unfinished Business.
 - (a) Amendments to Constitution.
14. Recess.

Second Session

Tuesday, September 11, 1934, 2:30 P. M.

1. Call to Order.
2. Roll Call.
3. Report of Reference Committees.
4. Unfinished Business.
5. Resolutions and New Business.
6. Recess.

Third Session

Tuesday, September 11, 1934, 7:30 P. M.

1. Report of Credentials Committee.
2. Roll Call.
3. Reports of Reference Committees.
4. Elections:
 - (1) President-Elect.
 - (2) Report of Nominating Committee.
 - (3) Election of Delegates and Alternates to A. M. A.
 - (4) Councilors:
 - 13th District—B. H. Van Leuven—Retiring.
 - 14th District—H. H. Cummings—Retiring.
 - (5) Place for 1935 Annual Meeting.
 - (6) Speaker.
 - (7) Vice Speaker.
5. Unfinished Business.
6. Adjournment.

COMMITTEE REPORTS

RADIO COMMITTEE

To the House of Delegates of the Michigan State Medical Society:

Herein is the report of the Radio Committee for the year ending June 30, 1934. This committee consists of W. A. Manthei, Lake Linden, L. F. Foster, Bay City, and William J. Stapleton, Jr., Chairman, Detroit. Four County Societies offered programs, namely—Jackson, Calhoun, Ingham and Wayne. Material for the talk was obtained from the A. M. A., Wayne County Medical Society and individual doctors. The thanks of the Committee are hereby extended not only to the above, but to the various Radio Stations who gave to the County Societies the time for broadcasting these health talks. We do not feel that it is necessary to offer any arguments regarding the giving of radio talks by the members of the medical profession. Our parent association, the A. M. A., is now broadcasting on both the great networks of the country, this time being donated by the Columbia and National Broadcasting Companies. The only rule laid down by the A. M. A., is "It is the opinion of the Judicial Council that radio broadcasting is a form of publicity and its use is subject to the same rules as those which apply to newspaper advertising and, therefore, is to be governed by the ethical principles of the Profession,"—Proceedings, House of Delegates, June, 1923.

Your Chairman has had an interview with Mr. Armstrong Perry, Council for "The National Committee on Education by Radio." As a result we are on their mailing list and receive much valuable information regarding radio.

The American Medical Association has a large and growing list of radio talks varying from five to fifteen minutes in length. These are available not only to County Societies, but I think can be obtained by any member of a County Society. Upon application a list of talks will be forwarded. Dr. Bauer is in charge of this work.

First comes Bay County.

Dear Dr. Stapleton:—

The following is the list of radio speakers and speeches over WBCM by the Bay County Medical Society:
 February 26th—Safeguarding Your Health, Dr. Lavery.
 March 1st—Whooping Cough, Dr. Foster.
 March 5th—X-ray Treatment, Dr. Ziliak.
 March 8th—Tuberculosis, Dr. Perkins.
 March 15th—Human Repair Shop, Dr. Tarter.
 March 22nd—Overweight, Dr. Husted.
 March 29th—Cross-eyed Child, Dr. Sherman.
 April 5th—Washington's Death, Dr. Moore.
 April 12th—Tuberculosis, Dr. Perkins.

April 16th—Swimming Hazards, Dr. Criswell.
 April 19th—Reducing, Dr. Lavery.
 April 23rd—Diseases of the Gums, Dr. Dobson.
 April 26th—Summer Round-up of Children, Dr. Foster.
 April 30th—Scientific Experiments and Med., Dr. Brown.
 May 3rd—Anemia, Dr. Lavery.
 May 7th—Fads and Fancies about Stomach Trouble, Dr. Stinson.
 May 10th—Acne, Dr. Lavery.

Fraternally yours,

(Signed) L. Fernald Foster, M. D.,
 Sec'y., Bay County Medical Society.

Dear Dr. Stapleton:—

I herewith submit to you, report of the radio activities carried out by members of the Ingham County Medical Society, and sponsored by the Second Councillor District, over station WKAR, Michigan State College at East Lansing.

Members of the Ingham County Medical Society have generously contributed their time in carrying on this project. Station WKAR will be closed during the summer vacation at the college, and our next year's activities will be governed by the amount and character of comments made concerning the past year's broadcasting.

The interest in these talks as evidenced by comment made by the listeners is not very great during the season the broadcastings are being carried on. However, the director of the station informs me that when the broadcast ceases, the public make inquiry as to why we are off the air. Apparently our programs are conspicuous when absent.

The Jackson programs, broadcast over the Jackson Station, are sponsored by the Jackson Medical Society and have not reported to me as yet. Undoubtedly they will report before the time of the State Meeting. The radio material we have used in our program is at your disposal if you chose to use it over other stations.

Sincerely yours,

(Signed) J. Earl McIntyre, M. D.,
 Councillor, Second District.

To the Councillor of the Second District of the Michigan State Medical Society:

The Medical Society of Ingham County participated in the Health Education program of the Michigan State Medical Society by sponsoring a series of medical talks over Radio Station WKAR.

There were eighteen talks given at intervals of one a week from January eleventh, nineteen-thirty-four to May seventeenth, nineteen-thirty-four inclusive. There was no talk on March twenty-ninth, due to the Spring Vacation period at the Michigan State College.

It was decided by the Director of the radio program and the District Councillor that we would not sponsor a program this year, because the response was not very great the previous year. However, the Program Director of the Radio Station, WKAR asked us to participate in their educational program again this year and we consented to do so.

These talks were given every Thursday afternoon from two-thirty P. M. to two-forty-five P. M., by various members of the County Medical Society.

The members of the Society co-operated splendidly when called upon to give the talks, with one exception. We had one talk scheduled for May twenty-fifth, but the director was unable to find a speaker, who had not previously given his time, and who did not have a golf date for that afternoon.

Although we have received no direct replies to our radio talks, I believe the program has been a successful undertaking this year. Some of the Doctors who talked reported that they had heard favorable comments on some of the talks given.

Attached is a list of the talks given and the name of the doctor by whom the talk was given.

Respectfully submitted,

(Signed) R. J. Himmelberger, M. D.,
 Chairman, Radio Program.

1934

1. January 11, 1934—Why have a Health Department? Dr. E. R. VanderSlice.
2. January 18, 1934—Epidemic Influenza, Dr. J. H. Albers.
3. January 25, 1934—High Blood Pressure, Dr. Cameron Keim.
4. February 1, 1934—Rheumatic Fever, Dr. R. J. Morrow.
5. February 8, 1934—Heart Disease in Children, Dr. R. R. McCrumb.
6. February 15, 1934—First Aid, Dr. H. C. Rockwell.
7. February 22, 1934—What About Our Drugs? Dr. O. B. McGillicuddy.
8. March 1, 1934—Unconsciousness, Dr. Howard Willson.
9. March 8, 1934—Management of the Expectant Mother, Dr. H. A. Miller.
10. March 15, 1934—Measles, Dr. C. R. McCorvie.
11. March 22, 1934—Convulsions in Infancy and Childhood, Dr. W. G. Wight.
12. April 5, 1934—Head Pains and Palpitations, Dr. L. E. Beeuwkes.
13. April 12, 1934—Whooping Cough, Dr. F. L. Troost.
14. April 19, 1934—Cancer in Men, Dr. E. J. Robson.
15. April 16, 1934—The Relation of the County Medical Society to the Community, Dr. Ray Pinkham.
16. May 3, 1934—Diphtheria, Dr. Edith Hall Kent.

17. May 10, 1934—The Human Repair Shop, Dr. J. E. McGillicuddy.
 18. May 17, 1934—Infantile Paralysis, Dr. J. S. Rozan.
 Dear Dr. Stapleton:—
 I am enclosing a list of medical talks which have been given over Radio Stations WWJ and CKLW from June 1, 1933 to June 16, 1934.

Sincerely yours,
 (Signed) Fred H. Cole,
 Chairman of the Radio Section,
 Wayne County Medical Society.

Radio Talks over Stations WWJ from June 1, 1933, to June 14, 1934.
 Thursday from 4:30 to 4:45.

SPEAKER TITLE

Dr. Alonzo Norconk—Diseases of the Thyroid.
 Dr. G. W. Laning—Care and Feeding of the Child During Hot Weather.
 Dr. Wm. Gordon—Faulty Metabolism.
 Dr. Franklin Peck—The Diabetic Camp.
 Dr. H. A. Cushman—The Important Periods of Female Life and Their Relation to General Health.
 Dr. Wm. Donald—The Common Summer Diseases: How to Avoid Them and How to Cure Them.
 Dr. George Waldbott—Hay Fever.
 Dr. G. C. Penberthy—The Significance of Bone Pain and Tenderness in the Child.
 Dr. Jack Agins—The Significance of a General Physical Examination.
 Dr. H. I. Kallet—N. I. R. A.
 Dr. W. J. Stapleton, Jr.—That Tired Feeling.
 Dr. H. F. Vaughan—Safeguarding Your Health.
 Dr. Emil Amberg—The Detroit League of Hard-Hearing.
 Dr. F. C. Witter—Facts for the Layman About Cancer.
 Dr. Chas. Kuhn—Why Grow Old?
 Dr. E. S. Guardjian—The History of Progress in Brain Operations in the Last 4,000 Years.
 Dr. Geo. P. Myers—Fractures.
 Dr. Eugene Osius—Goitre.
 Dr. R. K. Novy—The Heart.
 Dr. Fred W. Thomas—Dangerous Ages.
 Dr. A. W. Blain—The Cancer Problem.
 Dr. E. C. Baumgarten—What Everyone Should Know About Appendicitis.
 Dr. Wm. Burns—Raising Cain.
 Dr. John Watkins—The Clinical Laboratory and Modern Medicine.
 Dr. J. C. Smith—Pre-Natal Care in Obstetrics.
 Dr. Richard McKean—Periodic Headaches.
 Dr. Thomas Miller—Skin Cancer.
 Dr. N. H. Schlafer—What to do in an Emergency.
 Dr. Robert C. Moehlig—Some Pituitary Disturbances.
 Dr. Harry Saltzstein—The Home Treatment of Minor Injuries and Infections.
 Dr. W. C. Cole—The Prevention of Tuberculosis.
 Dr. Robert C. Jamieson—Eczema.
 Dr. Arthur Hammond—Foreign Bodies in the Food and Air Passages.
 Dr. A. P. Wilkinson—The Common Cold.
 Dr. Edgar G. Cochrane—Infant and Child in the Home.
 Dr. Wm. Gordon—The White Cell.
 Dr. Don Gudakunst—School Health Service.
 Dr. Bruce C. Lockwood—Preventive Medicine.
 Dr. Sam Altschuler—Dangers of Obesity.
 Dr. L. T. Clark—What is Tuberculosis?
 Dr. Leland F. Carter—Our Eyes—Young and Old.
 Dr. W. J. Wilson, Jr.—Blood Pressure.
 Dr. B. R. Shurly—Tuberculosis and the Child.
 Dr. Clarence Humphrey—Common Fractures.
 Dr. Harry S. Berman—The Normal and Problem Child.
 Dr. O. A. Brines—Cancer Facts.
 Mrs. S. Homer Ferguson—Public Coöperation for Maternal Health.
 Dr. John M. Carter—Progressive Deafness.
 Dr. David R. Clark—The Thing We Call Worry.
 Dr. John A. Johnston—Tuberculosis and the Child.
 Dr. Hampton P. Cushman—What Every Mother Should Know.
 Dr. J. E. G. Waddington—Satisfactory Medical Care.
 Dr. Harold Henderson—Some Popular Misconceptions Regarding Pregnancy.
 Dr. Harry August—The Nervous Breakdown.
 Dr. M. B. Landers—Is Tuberculosis Hopeless?
 Dr. Wm. Burns—Our Question Box.
 Dr. W. A. Chipman—Rupture.
 Dr. David I. Sugar—Rheumatism and Heart Disease in the Young.
 Dr. Stanley Insley—Facts Concerning Bronchial Asthma.
 Dr. D. L. Drummond—Chronic Arthritis.
 Dr. S. Hookey—The Normal Skin.
 Dr. Clark Lemley—Is it Goitre that is Poisoning You?
 Dr. L. F. Segar—Diabetes.
 Dr. Fred W. Munson—The Common Cold.
 Dr. Gaylord Bates—Minor Injuries and Infections.
 Dr. Robert Schaefer—Glandular Disturbances of Infancy and Childhood.
 Dr. Nelson McLaughlin—Early Signs of Cancer.
 Dr. Clarence D. Moll—Doctor, How's My Blood Pressure?
 Dr. O. J. Shore—What X-ray Tells Us About Bone and Joint Injuries.
 Dr. E. A. Peterman—Indigestion.
 Dr. Earl Lutz—What to do Before the Doctor Arrives.

Dr. Geo. M. Livingston—Fears, Anxieties and Worries.
 Dr. Melvin O. Kernick—Value of the School Examination.
 Dr. D. S. Brachman—Finding Tuberculosis.
 Dr. Rollin H. Stevens—How X-ray and Radium Acts on Cancer.

Dr. Clair L. Straith—Plastic Surgery.
 Dr. Lawrence Reynolds—X-ray as an Aid in Diagnosis in Diseases of the Stomach and Intestines.
 Dr. Nathan H. Moss—The Significance of Loss of Weight.
 Dr. A. E. Schiller—Facial Blemishes—Their Origin and Treatment.

Dr. J. A. Hookey—Cosmetics.
 Dr. C. C. Birkelo—What the X-ray Can Tell Us About Tuberculosis.

Dr. Franklin B. Peck—Progress in Diabetes.
 Dr. R. L. Fisher—Heart Disease.
 Dr. E. R. Robbins—Some Facts About Glands.
 Miss Emily Sargent—Improving Mother's Health.
 Dr. Wm. C. Hawken—Operative Complications.
 Dr. F. T. Munson—Headaches.
 Dr. Wm. Fowler—Medicine and the Depression.
 Dr. S. J. Levin—Hay Fever.
 Dr. A. B. Wickham—Recovering from Tuberculosis.
 Dr. R. H. L. Mason—Problems in Infant Feeding.
 Dr. N. H. Schlafer—What to do in an Emergency.
 As will be seen some 127 talks were given by the various County Societies.

A special word of thanks is due Dr. Frederick Cole for his work in Wayne County.

Dear Dr. Stapleton:—
 Am sorry to have to inform you that broadcasting over our local station was discontinued the first of the year largely because of a lack of suitable material.

Yours truly,
 (Signed) R. H. Alter, M. D.,
 Jackson County Medical Society.

Your chairman wrote Dr. Alter regarding the above and the following is his reply:

Dear Dr. Stapleton:—
 I was out of town when your letter was received and am sorry it was impossible to answer sooner.

In regard to our broadcasting here will say that until this year I have taken charge of it myself and I was well pleased with the results. However, with my other duties it became necessary for me to ask that part of the load be shared with others. At my request this work was turned over to a committee who I am sorry to say did not take the interest which I think it deserved. Much of the material received from the A. M. A. was thought by the committee to be of not sufficient interest to broadcast and part of it had already been used.

I shall see, however, that it is re-established this Fall.

Yours truly,
 (Signed) R. H. Alter.

In closing this report, the Committee again thanks all those who have made possible this program:

Respectfully submitted,

(Signed) William J. Stapleton, Jr., M. D.,
 Chairman, Radio Committee.

PREVENTIVE MEDICINE COMMITTEE

As Chairman of the Preventive Medicine Committee, I wish to submit the following report:

Committee meetings have been held in Detroit, Ann Arbor, and Muskegon. The work of the committee has been largely educational.

1. This committee has sponsored a series of articles written by Dr. H. F. Vaughan and dealing with the subject of medical participation which have appeared in the "Journal of the Michigan State Medical Society."

2. A meeting of the County Preventive Medicine Committees was held in Detroit in November, 1933. This was in the nature of a demonstration. The morning session was devoted to clinics in preventive medicine and the afternoon to a general discussion of medical participation.

3. One or more speakers were sent to fifteen county medical societies. Two of these meetings were held jointly with the Boards of County Supervisors and seven meetings heard talks on medical participation as well as clinical lectures.

4. A joint meeting with the Michigan Tuberculosis Association will be held in Lansing July 13th to try to work out a joint program in Tuberculosis case finding. A supplementary re-

port for this meeting will be given at the meeting of the Michigan State Medical Society in Battle Creek.

The Preventive Medicine Committee recommends to the Michigan State Medical Society,

1. That support be given to the Home Rule Movement. It is believed that the medical participation program advocated by this committee can be better carried out under Home Rule than under the present county government organization.

2. That the Michigan State Medical Society hire a full-time medical co-ordinator to carry out the program of the Preventive Medicine Committee.

The Preventive Medicine Committee wishes to thank Dr. Henry F. Vaughan for the articles which he wrote for the JOURNAL and for the many talks which he has given before county societies and boards of supervisors. We also wish to thank Drs. Gordon, Douglas, Evans, and Kasper for clinical talks which they have given and the W. K. Kellogg Foundation which has made it possible for the committee to send speakers to medical groups throughout the State.

Respectfully submitted,

LEDRU O. GEIB, *Chairman,*
Preventive Medicine Committee.

THE CANCER COMMITTEE

A meeting of the Cancer Committee of the Michigan State Medical Society was held at the Pantlind Hotel, Grand Rapids, Michigan, on Saturday noon, April 14, 1934. The following members were present: Dr. Osborne A. Brines, of Detroit, chairman; Dr. Carl V. Weller, of Ann Arbor, and Dr. Henry J. VanDenBerg, of Grand Rapids.

The report of the Sub-committee of the Committee on the Survey of Medical Services and Health Agencies of the Michigan State Medical Society, which was appointed to consider the cancer problem in Michigan, was carefully analyzed and considered. This report had been submitted by Dr. T. Leuceutia, of Detroit, and Dr. Carl V. Weller, of Ann Arbor, and has been accepted by the Society. A bulletin of the American Society for the Control of Cancer containing this report has recently been mailed to every member of the Society.

The following recommendations contained in this report were first considered: "A thorough survey by a trained personnel working in the field would reveal more completely the present facilities upon which future organizations may be built." "It is recommended that a fact finding investigation be initiated to learn definitely why there is a medium delay of six and one-half months between the first symptom and the first consultation with the physician."

Consideration was given to the advisability of inviting the American Society for the Control of Cancer to make a statewide cancer survey in Michigan. The enclosed letter from Dr. F. L. Rector, Field Representative, of the Cancer Society, setting forth in detail the methods which would be employed in making this survey, was considered.

It was unanimously agreed by the members of the Cancer Committee present that the Committee recommend to the Michigan State Medical Society, that an invitation be issued to the American Society for the Control of Cancer to make a cancer survey in the State of Michigan.

The following recommendations contained in the Sub-committee report were next considered. "All means of bringing the essential facts about cancer to lay people should be employed to the fullest degree." "It is recommended that thru more extensive instruction along these lines the medical schools

and by post-graduate clinics, conferences and lectures, the profession be kept fully informed of advances in the field of endeavor suggested, and made more keenly conscious of individual responsibility toward the potential cancer patient. Similar instruction is appropriate for the dental profession."

The Cancer Committee urges the State Medical Society to seriously encourage inauguration of cancer programs in the county medical societies. It is recommended that at least two meetings a year some phase of cancer should be made a part of the scientific program of the county societies. It is further recommended that speakers for these occasions be arranged for and selected by the Cancer Committee of the State Society.

With the same Sub-committee recommendations in mind, it is recommended that the post-graduate school of the University of Michigan be requested to include as far as possible cancer instruction to the medical profession in its post-graduate activities.

It is further believed that cancer as a public health problem can be presented thru the medium of public school education, and it is recommended that every attempt should be made to arrange for a suitable talk to be made by appropriate physicians to high school students at frequent intervals.

The Committee believes that persistent and frequently repeated efforts in the direction of public education are necessary. The Committee approves and wishes to encourage the activities of the publicity department of the University of Michigan under the direction of Mr. Morrissey and believes that the publication of newspaper articles concerning cancer should be extended. The members of the Committee agreed to investigate ways and means of increasing the scope of newspaper publicity in the field of cancer.

Summary—The following recommendations are hereby made by the Cancer Committee of the Michigan State Medical Society:

1. Request the American Society for the Control of Cancer to make a statewide survey of Michigan.
2. Establish regular cancer programs in the meetings of the County Medical Society.
3. Request the post-graduate school of the University of Michigan to include more subjects dealing with cancer in its medical teaching activity.
4. Establish a definite and persistent cancer education program in the public schools.
5. Extend, in a systematic manner, newspaper publicity thruout the State in an attempt to acquaint the public at large with the magnitude of the cancer problem and to disseminate information which should tend to the earlier recognition of the disease.

Submitted by

O. A. BRINES, *Chairman.*

AMERICAN SOCIETY FOR THE CONTROL OF CANCER

1250 Sixth Avenue—Rockefeller Center
New York, N. Y.

823 Case Street,
Evanston, Illinois,
December 6, 1933.

Dr. O. A. Brines,
Chairman, Cancer Committee,
Michigan State Medical Society,
Receiving Hospital,
Detroit, Michigan.

Dear Doctor Brines:

The cancer survey made by the American Society for the Control of Cancer on invitation of state medical societies are essentially fact-finding surveys and not clinical. They are conducted along the following lines:

A short questionnaire is sent to each general hospital in the State of 25 or more beds, a few weeks before the field work is begun. These requests are for data on bed capacity, x-ray and radium facilities, laboratory facilities and personnel, and experience with cancer cases during the previous year, such as number of such patients admitted to the hospital, number dying and autopsied.

These reports are taken into the field and each hospital visited in turn and the facilities checked personally. Hospital executives and staff members are met and the cancer program discussed with those interested. The information is then analyzed and collected into a report together with a suggested program of better service to cancer patients in which the facilities of the State are included and others suggested to meet the needs of the largest possible number of people in the State.

The State Department of Health is invited to sponsor these surveys and to contribute statistical information on cancer mortality and mortality from other diseases. The State Hospital Association is also asked to approve and endorse the survey so that all interested groups will be informed as to its purposes and objectives.

No attempt is made to influence clinical activities except to encourage their improvement and to safeguard the interests of the patient by suggesting that approved methods of diagnosis and treatment are available and should be employed.

These surveys are made without expense to the medical societies. The co-operation of the various hospital staffs and officers of the State and local groups is expected after the invitation is once extended. This is usually accomplished thru the State Cancer Committee of the State Medical Society.

The report of the survey is submitted in confidence to the State Medical Society for its approval, and until such approval is given this Society gives no publicity to the survey or its findings. It is hoped and desired that the medical society will publish the report in its official journal or otherwise after it has accepted it in order that it may be available to all its members and others interested in the work.

To date Statewide surveys have been made in St. Louis, Mo., Colorado, Iowa, Kansas, Wisconsin, and Minnesota. Invitations have been received from Missouri and Nebraska.

Sincerely,

F. L. RECTOR, M. D., *Field Representative.*

ADVISORY COMMITTEE TO THE WOMEN'S AUXILIARY

During the year just closed, the duties of the Advisory Committee to the Women's Auxiliary have not been arduous but have been exceedingly pleasant.

The members of the Committee have met informally with various Auxiliary groups, principally at dinner meetings. While we have not been called upon for any formal action, we have all acted informally as advisers on numerous occasions, but must confess that we have learned much more from the activities of the Auxiliary last year than we have been able to instruct, teach or advise.

The Michigan State Medical Society is to be congratulated upon the zeal, interest and progressiveness of its Auxiliary as a state organization, in county units, and as individuals.

Respectively submitted,

J. M. ROBB,
T. H. HEAVENRICH,
LOUIS J. HIRSHMAN, *Chairman.*

COMMITTEE ON THERAPEUTICS

Your Committee on Therapeutics has made a study of the prescribing of drugs and medicines, both in the hospitals and elsewhere, in this state, the results of which are to be published by the members of the committee in a series of three articles in the JOURNAL, by Drs. Poos, Shaw, and Louis Le Fevre, and we wish that you accept these articles as our report for the year.

The salient points in these papers, which the committee submits for your study and consideration, are as follows:

1. There is too much prescribing of well advertised, high priced pharmaceuticals, especially among the younger members of the profession.
2. Many of the proprietary preparations advertised to the profession and to the public, and sold under trade-marked names, are duplicates of preparations already listed in the United States Pharmacopoeia or the National Formulary which sell at retail at about one-third the price of the trade-marked products.
3. The Committee feels that the medical profession of this state should be ever on its guard against lending itself to the exploitation of the public by certain drug houses, whose method is to market an old National Formulary or United States Pharmacopoeia preparation under a trade-marked name, introduce it to the profession by means of free samples and a recommendation for its therapeutic application, and, after the doctors have distributed enough of the free samples to their patients, advertise the drug to the public at three times the drug store price for the United States Pharmacopoeia preparation, usually with the suggestion that as this is what the doctors are prescribing, why not get it from the drug store direct and save a doctor's fee.
4. The hospitals of this state are put to an expense which they cannot afford because various physicians on their staffs prescribe the same drug under several different trade names, and by the desire of some physicians to try out each old drug that the pharmaceutical houses put out under a new name.
5. The committee recommends, that in the interests of the education of the internes and resident physicians, each hospital draw up a formulary of drugs and preparations recommended for use in the hospital, and that the indiscriminate prescribing of drugs not in the formulary be discouraged.

LOUIS LE FEVRE, *Chairman.*

DELEGATES

NOTE: Names of Delegates are in capitals, Alternates in lower case type.

Alpena County

F. J. O'DONNELL
A. R. Miller

Barry County

M. R. KINDE
H. S. Wedel

Bay-Arenac-Iosco

L. F. FOSTER
E. S. Huckins

Berrien County

W. C. ELLET
John E. Ames

Branch County

A. G. HOLBROOK
R. L. Wade

Calhoun County

C. S. GORSLINE
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W. L. Godfrey
A. D. Sharp

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W. C. McCUTCHEON
E. M. Cunningham

Chippewa-Mackinac

B. T. MONTGOMERY
F. C. Bandy

Clinton County

D. W. Hart
F. D. Richards

Delta County

J. J. WALCH
J. W. Towey

Dickinson-Iron

W. H. ALEXANDER
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Eaton County

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FRANK REEDER
Donald Wright
Max Burnell
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W. E. TEW

Grand-Traverse-Leelanau

E. F. SLADEK
J. W. Gauntlett

Gratiot-Isabella-Clare

T. J. CARNEY
W. L. Harrigan

Hillsdale County

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GEORGE M. WALDIE
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DAVID D. McNAUGHTON
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Ingham County

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C. L. F. DeVries
H. C. Rockwell

Ionia-Montcalm County

LLOYD S. DUNKIN
A. I. Laughlin

Jackson County

PHILLIP RILEY
JAMES O'MEARA

Corwin Clarke
H. A. Brown

Kalamazoo, Allegan and Van Buren

F. T. ANDREWS
C. TEN HOUTEN
R. G. COOK
G. M. Riley
D. E. Squires
E. G. Low

Kent County

A. V. WENGER
H. I. PYLE
R. H. DENHAM
V. M. MOORE
C. F. SNAPP
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Leon Sevey
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M. E. Roberts
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O. WHITNEY
A. W. Chase

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HARRY G. HUNTINGTON
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H. E. PERRY
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Stephen Fairbanks

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VIVIAN VANDEVENTER
R. A. Burke

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L. W. SWITZER
Chas. A. Paukstis

Mecosta County

G. H. YEO
P. B. Kilmer

Menominee County**Midland County**

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R. E. Rice

Monroe County

P. D. AMADON
D. C. Denman

Muskegon County

ROY H. HOLMES
Frank W. Garber

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A. C. TOMPSETT
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Northern Michigan

FREDERICK C. MAYNE
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Oakland County

ROBERT BAKER
CLIFFORD EKELUND

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Harold Furlong

Oceana County

WM. HEARD
Wm. M. Lemke

Otsego-Montmorency,**Crawford-Oscoda-Roscommon-Ogemaw**

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Schoolcraft County

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A. R. Tucker

Shiawassee County

I. W. GREENE
W. B. Fillinger

St. Clair County

A. L. CALLERY
T. E. DeGurse

St. Joseph County

R. A. SPRINGER

Wexford County

W. J. SMITH
J. F. Gruber

Tuscola County

J. G. MAURER

W. P. Petrie

Washtenaw County

JOHN WESSINGER

DEAN MYERS

A. C. Kerlikowski

S. L. La Fever

Wayne County

J. M. ROBB

A. W. BLAIN

WM. J. CASSIDY

R. H. PINO

H. W. YATES

G. C. PENBERTHY

A. E. CATHERWOOD

R. M. McKEAN

L. J. HIRSCHMAN

J. L. CHESTER

H. F. DIBBLE

C. F. BRUNK

H. W. PLAGGEMEYER

GEORGE KAMPERMAN

W. R. CLINTON

L. J. GARIEPY

S. A. FLAHERTY

A. P. BIDDLE

D. I. SUGAR

S. W. INSLEY

L. O. GEIB

E. D. SPALDING

L. T. HENDERSON

H. A. LUCE

W. D. BARRETT

E. C. Baumgarten

C. K. Hasley

B. C. Lockwood

L. J. Morand

Wm. J. Stapleton, Jr.

C. E. Dutchess

Wm. A. Evans

Wm. S. Reveno

R. Lee Laird

Roger V. Walker

C. E. Lemmon

H. W. Pierce

H. L. Clark

M. H. Hoffmann

J. A. Kasper

A. H. Whittaker

S. P. L'Esperance

R. S. Goux

B. U. Estabrook

C. S. Ratigan

B. L. Connelly

F. B. Burke

I. A. Hookey

I. C. Kenning

C. K. Valade

CREDENTIALS COMMITTEE

L. T. Henderson, Chairman—Wayne County

A. T. Hafford—Calhoun County

C. Ten Houten—Kalamazoo County

L. W. Switzer—Mason County

A. E. Stickley—Ottawa County

This committee will receive and pass upon Delegate's credentials. Delegates must secure their credentials from their County Secretary.

GENERAL INFORMATION

1. Time. Battle Creek is on daylight saving time.
2. Hotels

Kellogg Hotel—Headquarters for officers and delegates and invited guests.

Post Tavern—

1. General Headquarters.
2. Ladies' Auxiliary Headquarters. Slogan "Meet Me on the Bridge."
3. Entertainment Tuesday, September 11, 9:30 P. M.
4. Big Night, Wednesday, September 12. Informal. No big banquet or speaker.

Hotel Rates

Kellogg, 120 rooms. Single, \$2.50 to \$3.50; double, \$4.00 and up.

Post Tavern, 240 rooms. Single, \$2.50 and up; double, \$4.00 and up.

Clifton, 74 rooms. Single, \$1.00 and \$1.50; double, \$1.50 and \$2.50.

La Salle, 35 rooms. Single, \$1.50 and \$2.00; double, \$2.00 and \$3.00.

La Verne, 30 rooms. Single, \$1.50 and \$2.00; double, \$2.00 and \$3.00.

Please write direct to hotel for reservations.

There will also be private homes available, write to Chairman, Dr. R. C. Winslow.

3. Scientific Sessions

The several Scientific Sections will convene on Wednesday morning from 9:00 to 11:00 A. M. and on Thursday morning from 9:00 to 12:00 A. M.

All the Sections will combine into a general meeting at 1:15 P. M. on Wednesday and Thursday afternoons.

4. Local Committees

General Chairman—Wilfrid Haughey.

Meeting Places—C. S. Gorsline, Chairman, H. M. Lowe, L. P. Shipp, Gertrude Johnson, and C. C. London.

Hotels—R. C. Winslow, Chairman, J. E. Cooper, F. LaFrance, W. M. Putman, E. Van Camp, and Bertha Mosher.

Entertainment—C. W. Brainard, Chairman, C. R. Hills, B. G. Holtom, F. R. Walters, M. A. Mortenson, and Estella Norman.

Automobiles and Parking—A. M. Giddings, Chairman, W. R. Chenoweth, J. W. Gething, Karl Zinn, and S. E. Barnhart.

Section Monitors—N. H. Amos, Chairman, Phillip Bonifer, R. H. Fraser, T. K. Kolvoord, Stanley Lowe, and L. E. Varity.

Guests and Speakers—H. F. Becker, Chairman, H. Hanson, R. Stiefel, W. O. Upson, and W. M. Dodge.

Registration—Russell Musard, Chairman, Carl G. Wencke, W. M. Dugan, A. W. Nelson, and F. G. Melges.

Finance—A. E. MacGregor, Chairman, S. Pritchard, G. M. Byington, J. E. Rosenfeld, E. L. Eggleston, and C. E. Stewart.

Public Health Exhibit—A. A. Hoyt, Chairman, R. H. Baribeau, W. F. Martin, M. J. Capron, C. G. Fahndrich, W. L. Howard, and Arthur Humphries.

Reception—R. D. Sleight, Chairman, H. R. Allen, A. H. Bennett, J. A. Elliott, W. L. Godfrey, E. E. Hancock, E. L. Hanson, W. H. Haughey, J. J. Holes, Carrie S. Kellogg, Kenneth Lowe, C. G. Morris, Adonis Patterson, W. A. Royer, R. H. Steinbach, N. O. Byland, J. K. M. Gordon, C. W. Heald, John Heald, L. Jespersen, W. B. Lewis, A. B. Olson, W. H. Rilev, Paul Roth, W. E. Vandervoort, Bruce Whyte, J. H. Kellogg, Nelson Abbott, G. W. Behan, Herman Beuker, E. M. Chauncey, S. K. Church,

Robert K. Curry, E. Clare Derickson, G. B. Gesner, George C. Hafford, A. T. Hafford, C. E. Hale, Louis M. Henderson, Phillip M. Henderson, H. A. Herzer, O. Johnson, K. B. Keeler, L. N. McNair, J. Roberts, and A. D. Sharp.

5. Registration

Registration and Information Booths will be located in the Gymnasium in the Auditorium.

6. Commercial and Scientific Exhibits

These will be located in the spacious gymnasium in the Auditorium.

Annual Meeting Exhibitors

1. The G. A. Ingram Co.
2. The G. A. Ingram Co.
3. The G. A. Ingram Co.
4. The G. A. Ingram Co.
5. Hack Shoe Co.
10. Abbott Laboratories.
11. The Kellogg Co. Home Economics Dept.
12. Horlick's Malted Milk.
13. General Elec. X-Ray Corp.
14. Petrolagar Laboratories.
15. Gerbers.
16. The J. F. Hartz Co.
17. The Lakeside Laboratories.
18. American Hospital Supply Corp.
19. The Medical Protective Co.
21. H. G. Fischer Co.
22. L. O. Geib
23. Physiotherapy Equipment Co.
24. R. B. Davis Co.
25. A. Kuhlman & Co.
26. Universal Products Co.
28. Battle Creek Food Co.
30. Merck & Co.
31. Mead Johnson & Co.

7. President's Address

The President will deliver his annual address at the General Session Wednesday morning at 11:00 A. M.

8. Section Monitors

N. H. Amos, Chairman

Section on Medicine

L. E. Verity

L. P. Shipp

Section on Surgery

R. A. Stiefel

H. Hanson

Section on Gynecology

F. J. Melges

F. La France

Section on Ophthalmology and Otolaryngology

R. H. Fraser

Karl Zinn

Section on Pediatrics

Stanley Lowe

Philip Bonifer

Section on Dermatology

T. K. Kolvoord

W. R. Chynoweth

9. Patronize your exhibitors.

10. Watch Bulletin Boards.

11. Be sure to register and secure hand program with further announcements.

Plan

To

Attend

This

Annual

Meeting

CONTRIBUTED ARTICLES

TREATMENT OF INTESTINAL OBSTRUCTION*

C. R. DAVIS, M.D., A.B.†

DETROIT, MICHIGAN

The treatment of intestinal obstruction is surgical. The time for operation is soon after the onset of symptoms. The type of operation depends upon the condition which causes the obstruction. To these three phases in the treatment of intestinal obstruction must be added the preoperative treatment and the postoperative treatment.

Because it is so generally admitted that intestinal obstruction should be treated surgically, I shall say no more about that phase of the treatment.

That operation should be done as soon as possible after the onset of symptoms is also admitted generally. Many physicians, however, do not appreciate how promptly the operation should be done as they appreciate that the treatment should be surgical. The demand for early relief of intestinal obstruction is exceeded only by the demand for early relief of obstruction of the respiratory passages and is equalled only by the demand for early operation in perforated gastric ulcer. With few exceptions the necessity for relief of intestinal obstruction is more urgent than the necessity for the arrest of hemorrhage.

Some remarks and statistics about how soon after the onset of symptoms of intestinal obstruction operation should be done may not be amiss. According to Drs. H. E. Veldman and Frederick C. Warnshuis⁸ the mortality is as follows:

	<i>Number of Cases</i>	<i>Lived</i>	<i>Died</i>
1 to 12 hours.....	12	8	4
13 to 24 hours.....	15	8	7
25 to 48 hours.....	17	9	8
49 to 72 hours.....	8	3	5
4 to 7 days.....	18	8	10

These figures indicate that the operation should be done within twelve hours. Dr. Wm. B. Holden³ had a mortality of 26 per cent in referred cases and five and one-sixth per cent in non-referred cases and believes that an early operation in the hands of a novice is better than a late operation in the hands of an expert. He believes operation

should be done within twelve to twenty-four hours after the onset of symptoms. The higher mortality in referred cases was due undoubtedly to the fact that time was lost because the patient had to wait for the two physicians in turn, first the family physician and then the surgeon. Time was saved in the non-referred cases because one physician had been eliminated. At least, these were my conclusions when I reviewed the report in which he has stated the results in his 119 referred cases and fifty-eight non-referred cases. Dr. Alton Ochsner⁶ believes that intestinal obstruction should be operated upon within twelve hours. Bailey¹ says that the operation should be done within twelve to twenty-four hours.

In my own series of sixty-four cases there were twenty-four deaths, which makes the mortality 31.24 per cent. The twenty-four patients who died either had multiple obstruction or had been sick longer than six hours. The forty patients who recovered either had single obstruction or had been sick less than six hours. These figures indicate that if we operate upon patients with intestinal obstruction early and if the obstruction is single, the mortality should be low instead of high, although the average mortality is nearly 50 per cent. I believe that the most important single item in the treatment of intestinal obstruction is early operation. I can see no reason for waiting twelve to twenty-four hours. In fact, after I had reviewed my own cases, I decided that the operation should be done within six hours after the onset of symptoms.

Little preoperative attention is needed in

*Read at the November, 1932, staff meeting of the Delray General Hospital.

†Dr. C. R. Davis is a graduate of Ouachita College, Arkansas, Cornell University, New York City, M.D., 1908. He served as interne and House Surgeon at the Presbyterian Hospital in New York City. He is attending Surgeon, Grace Hospital (Miriam Memorial Branch) and Chief of the Surgical Staff of Parkside Hospital, Detroit.

intestinal obstruction. Lavage by diminishing the size of the stomach and consequently decreasing the intra-abdominal contents facilitates operation. One-quarter grain of morphine sulfate and 1/150 grains of atropine sulfate should be given hypodermically just before the operation but not earlier. The first dose of morphine should not be given until the patient is in the hospital and ready for operation. Although it is the duty of the family physician to relieve suffering and comfort the sick, his chief duty in intestinal obstruction is to save the life of his patient. To do this he must let the patient suffer until just before the operation. Suffering, in turn, will advance the hour for the operation. Transfusion of blood, infusion and hypodermoclysis of sodium chloride solution should be kept in mind and used before operation when necessary.

The type of operation to be used in intestinal obstruction depends upon the condition which causes the obstruction. The more accurate the diagnosis, the better the operation can be planned; also the incision can be placed in a more favorable location. Before discussing the operations which are adaptable to the specific conditions which cause the obstruction, I shall discuss procedures which are applicable to obstruction in general.

The first detail which will command attention is anesthesia. Dr. A. I. McKinnon⁵ has said that for the relief of intestinal obstruction in general peritonitis, and this may be applicable to other types of obstruction, the operation should be done under local anesthesia, because local anesthesia does not hinder peristalsis. When a general anesthetic is used, two days are required for the intestines to regain their tone and expel their contents. I am sure that you will admit that it is difficult to empty the bowels during the first two days after any operation in which a general anesthetic has been used. In intestinal obstruction, if immediate evacuation of the intestinal contents can be obtained, the patient has a better chance to live. Spinal anesthesia can also be used in many patients successfully because spinal anesthesia as well as local anesthesia does not stop peristalsis; therefore, both local and spinal anesthesia are better for intestinal obstruction than general anesthesia, which does interfere with peristalsis. Of course, gas and ether must frequently be resorted to,

and are used routinely by some men, but it is my opinion that they should be used only in cases not suitable for local or spinal anesthesia. It is better to do as much of the operation as possible under local or spinal anesthesia in suitable cases and to add general anesthesia when the local or spinal anesthesia is not satisfactory.

A second detail in the treatment of intestinal obstruction is the incision. When the location of the cause of the obstruction cannot be determined, a general exploration is needed. A paramedian incision just next to the umbilicus permits the surgeon to make a very satisfactory exploration and does little damage to the nerve supply of the abdominal wall. This incision should extend from one-third of its length above the level of the umbilicus to two-thirds of its length below the level of the umbilicus. If the site of the obstruction can be determined before the operation is begun, an incision which permits the best approach for the relief of the condition which causes the obstruction should be used.

Another general item in operating for intestinal obstruction is the handling of the bowels. If the obstruction is sought for by following the collapsed bowel up, and if relief of the obstruction can be effected easily, evisceration may not be necessary, but evisceration is frequently the most rapid and best method for locating and relieving obstruction; it is even preferred as a routine procedure by some. When distended bowel only presents as the abdomen is opened, the best point to begin the search for the obstruction is the cecum. If the ileum and cecum are dilated, the obstruction is below the cecum. If the ileum is collapsed, the obstruction is above the cecum. When evisceration must be done the bowels should be protected by hot packs. The evisceration of the bowels into a rubber bag surrounded by hot compresses as recommended in Lewis' *Surgery*⁴ should be an excellent procedure. I have never followed this procedure but am thinking seriously of doing so, because the rubber will traumatize the peritoneum less than gauze when the bowels are wrapped with gauze pads.

Another procedure applicable to all kinds of intestinal obstruction is enterostomy. An enterostomy may be either one of two types: in one type of so-called enterostomy which is really an enterotomy, the bowel is closed im-

mediately after the intestinal contents have been evacuated; in the other type of enterostomy, which is a true enterostomy, the tube is left in the bowel for from several to twelve days until the patient's recovery is well advanced, or until the operation for the relief of the obstruction can be done. An additional guide for the removal of the tube from the bowel is the foul smelling fluid. When the fluid which escapes from the bowel has lost its peculiar foul smell, the tube may be removed, usually on the seventh to the tenth day. The latter type of enterostomy is done to save the life of a patient who is extremely ill and to tide him over until the operation for the relief of the obstruction can be done safely.

Double enterostomy, which Bailey credits D. P. D. Wilkie with having done, consists in doing one enterostomy above the obstruction and a second one below the obstruction; the two tubes from the two openings were then connected with a glass connecting tube, and the bowel contents were permitted to follow their normal course. The double enterostomy has been used when the first opening in the bowel was made too low. Precaution should be taken with every enterostomy against the tube being pulled out or slipping out. Slipping out can be prevented by tying two skin sutures around the tube or by strapping the tube to the abdomen with adhesive tape so that any pull on the tube is stopped by the stitches or the adhesive tape.

Dr. Holden³ is an advocate of the enterostomy which is closed at once. He does the enterostomy in the lowest part of the obstruction and milks the contents of the bowel through a tube temporarily inserted into this opening. This milking is done rapidly by drawing the bowel from above down between compressed fingers which have been coated with vaseline. In order to empty the bowel contents thoroughly, the milking may be done more than once, if necessary. The report of this procedure by Dr. Holden at a meeting of the American College of Surgeons in Chicago was very attentively although questionably received. He attributed his low mortality of 26 per cent in referred cases and five and one-sixth per cent in non-referred cases to this procedure, although this low mortality may be owing to the fact that he operated early, the importance of which he fully appreciates also. I tried this

technic on one patient who had a large amount of strangulated bowel in a ventral hernia. I was forced to use the procedure because I could not replace the bowels in the abdomen otherwise. The patient, who was seventy-two years old, had been sick for two days. The postoperative comfort in this patient was so out of proportion to her preoperative condition that I was very much impressed by the feasibility of the procedure. Although the patient died, the tendency toward recovery during the two days she lived was far beyond my expectation. I feel that Dr. Holden's procedure is worthy of consideration and trial, and intend to use it whenever the bowels are loaded with toxic contents as they so often are. Although Dr. Holden's procedure is not recommended in cases of general peritonitis, Dr. J. W. Kennedy, in a paper read to the Wayne County Medical Society several years ago, attributed a very low mortality in cases of peritonitis to stripping the bowels in a manner similar to Dr. Holden's milking but without the enterostomy.

The second type of enterostomy which is the true enterostomy and which is allowed to remain open is the one which is done as a temporary measure to prolong the life of the patient until such time as his condition will permit a direct attack upon the cause of the obstruction. It is also done in cases of general peritonitis, in which disease the cause of death is considered to be intestinal obstruction. Dr. McKinnon⁵ believes that a high jejunostomy is the enterostomy of choice. Because obstruction is accompanied by reversed peristalsis and eventually fecal vomiting, his argument is certainly logical, for then the enterostomy opening will be at the end of the reversed intestinal stream instead of at the beginning of it as in cases where the enterostomy is placed low. The enterostomy is specially applicable in peritonitis cases in which no other operative procedures may be undertaken. Advocates of low enterostomy may be correct also because if an enterostomy is done at the lowest part of the obstruction, the obstruction will be relieved, and the contents of the bowels will be permitted to resume their normal course downward.

Dr. Alton Ochsner⁶ quoted Van Beuren and Smith as having reported a higher mortality in cases treated by enterostomy than in cases treated without enterostomy. In

those cases the enterostomy was probably done in very severe and advanced cases only, because men who resort to enterostomy early, as is done commonly at the present time, have reported a lower mortality in cases in which enterostomy has been done than in cases in which enterostomy has not been done. If enterostomy is done in the presence of gangrene, and the gangrenous bowel is not resected, the patient, of course, will die.

When gangrene of the bowel is present, the gangrenous bowel either must be invaginated or resected. If the gangrenous portion of bowel is less than three inches, it may be invaginated with mattress sutures. If resection must be done, the mistake of resecting too little bowel should not be made because it is just as easy to resect two feet as to resect two inches. The greatest difficulty in dealing with gangrenous bowel is the recognition of viability; and it is very important that viability be recognized, because viable bowel need not be resected; its replacement in the abdomen is all that is required. A viable bowel has a glistening peritoneal covering, the black color of the strangulated bowel will change to red when hot towels are applied to it, muscular contractions of the bowel will occur and should be distinct, and the blood vessels leading to this portion of the bowels will be pulsating. The point of constriction of the bowel in an obstruction is the point most likely to be non-viable.

After a resection of the small bowel has been done, an end-to-end, a side-to-side, or an end-to-side anastomosis may be used, but after a resection of the large bowel has been done, and if the anastomosis of the remaining bowel is of the large and small bowel, or of large bowel alone, and end-to-side, or an end-to-end anastomosis is preferred beyond the cecum; because the feces in the small bowel are liquid and the feces of the large bowel are solid beyond the middle of the transverse colon, trouble will result if a side-to-side anastomosis is done; the solid feces will accumulate in the blind pouch which is formed when a side-to-side anastomosis has been done, and this accumulation of hard feces causes distress. In the ascending colon and the first half of the transverse colon the fecal contents are more likely to be liquid or semi-solid, and the objection to the side-to-side anastomosis does

not hold if the anastomosis is done at the cecum. When bowel has been resected, the mesentery should not be sewed together because vessels may be stuck, and the resulting hemorrhage add to the dangers of the operation. The free margins of the mesentery should be clamped first and then tied together.

In discussing the adaptation of the operation to the condition which causes the obstruction, I shall consider the treatment of intestinal obstruction under two general groups in which I have found a great spread in mortality rates. One group is the single obstruction, and the other group is multiple obstruction. In single obstruction there is only one point of obstruction; in multiple obstruction there are several points of obstruction. In single obstruction there are a variety of conditions which cause obstruction, and they are as follows: adhesions, enteroliths, gall stones, foreign bodies, fecal impaction, especially rectal, hernia, volvulus, intussusception, diverticula, including Meckel's diverticulum, inflammatory causes and abscesses, megacolon, mesenteric thrombosis, and congenital obstruction, chief of which is imperforate anus. In multiple obstruction, the causes of obstruction may be adhesions, either acute or chronic, ventral, incisional, and umbilical herniæ, new growths, and inflammatory causes, as tuberculosis and abscess.

A simple single obstruction caused by a band or adhesions requires division of the obstructing band and nothing more. An exception to this rule occurs in obstruction of the duodenum. If the cause of the obstruction cannot be removed, a gastrojejunostomy, or a duodenojejunostomy may be necessary. Volvulus, which can be relieved by untwisting the bowel, may be included in the group of single obstruction due to adhesions or bands so far as treatment is concerned. In volvulus, it may be necessary to attach the mesentery to the abdominal wall to prevent a recurrence. Of course, in removing the causes of the obstruction, the surgeon must be guided by what has already been said under conditions applicable to all forms of obstruction. In volvulus of the sigmoid some men have been able to relieve the volvulus by passing a rectal tube into the loop of obstructed bowel with the aid of the sigmoidoscope.

Another type of simple obstruction is that

caused by material inside the bowel, as enteroliths, gall stones, fecal impaction, and foreign bodies. In this form of obstruction, an enterotomy with removal of the foreign body effects the cure. If the fecal impaction is in the rectum, the fecal material may be removed with the finger or a dessert spoon.

Obstructions caused by diverticula, especially Meckel's diverticulum, require relief of the obstruction first and removal of the diverticulum if the condition of the patient will justify it.

Intussusception is a class by itself. If gangrene is not present, a reduction must be attempted by pushing on the intussusceptum and teasing it back. Reduction as a rule can be accomplished in this manner. A few sutures attaching the bowel near the beginning of the intussusception to the anterior abdominal wall will prevent a recurrence; some men, however, question success by this procedure, think it is not necessary, and even prefer not doing it. Occasionally the constricting portion of the bowel will require incising longitudinally opposite the mesenteric border. It may be necessary to incise only the peritoneal and muscular coats which avoids contaminating the peritoneal cavity with intestinal bacteria. When an incision has been used, it, of course, must be repaired. Intestinal growths, frequently the cause of intussusception, must be removed, when present, by enterotomy, or the obstruction will recur. A cathartic should not be given to a patient whose intussusception has just been reduced because it might recur immediately. If gangrene of the bowel is present, resection must be done.

In resection of bowel in intussusception a special method of resection appears highly appropriate although I have not tried it. Maunselles' ¹ method of resection is as follows: sew the entering bowel to the ensheathing bowel with a few interrupted sutures; cut the ensheathing bowel longitudinally, pull out the apex of the intussusceptum, apply traction sutures to the portion of the bowel to be left behind, and cut off the apex of the intussusceptum. Then suture the two layers of bowel together with a buttonhole stitch and close the longitudinal opening in the intussusciens.

The treatment of obstruction due to hernia is well known. The neck of the sac which causes the obstruction frequently must be incised before the obstructed bowel can be

freed. In retroperitoneal hernia the anatomy of the blood supply about the opening must be borne in mind so that no vessel which supplies bowel is cut, if the neck of the sac requires cutting. If the constricting neck cannot be cut, aspiration of the contents of the obstructed bowel may permit a reduction of the hernia. After the bowel has been freed, it should be pulled out so that the constricted portion may be examined for viability. A fecal odor in the sac is conclusive evidence of gangrene. If the patient's condition is bad, the damaged portion of the bowel may be left open as an enterostomy and repair of the hernia left undone. The open ends of the bowel may be united later. In very bad cases the two loops of bowel may be joined by a lateral anastomosis and the gangrenous loops outside of the abdominal cavity left untouched for a couple of days, and then the bowel may be excised and the ends of the bowel closed. If a perforated bowel has slipped back into the abdomen, a second incision, either a rectus or a paramedial incision, should be made if the hernia is inguinal or femoral, and the damaged bowel should be disposed of according to indications. Strangulated omentum should be excised. Catheterization should be done in strangulated femoral hernia so that the bladder may not be damaged during the operation by being in the field of operation. In femoral hernia the upper operation, above Poupart's ligament, should be done because the bowel cannot be dealt with properly in the lower operation in which the incision is placed over the swelling. Also, the lower operation does not permit handling of the bowel if the obstruction should become reduced before the bowel has been inspected. Bailey ¹ credits Lotheisen with an excellent description of operating above Poupart's ligament. This paragraph on hernia cannot be closed without reference to diaphragmatic hernia, a condition which may be encountered at any time and which must be kept in mind. A complication peculiar to one form of hernia is cellulitis following umbilical hernia, which can be avoided by draining the dead space for a day or two.

Again, intestinal obstruction may be caused by inflammatory conditions. The most common inflammation occurring in the abdomen is peritonitis. It is in this type of inflammation that enterostomy is most frequently used. In obstruction due to abscess

the abscess must be drained, adhesions separated, and an enterostomy done according to the indications. In tuberculous inflammation resection of the bowel must sometimes be done. It is questionable which type of obstruction can tax the ability of the surgeon the most.

Mesenteric thrombosis causes obstruction. Little can be done other than resection of the gangrenous bowel. The gangrenous mesentery must also be excised if peritonitis is to be avoided. After the ends of the bowel have been united, a cecostomy or ileocolostomy should be done.

Obstruction due to carcinoma must be relieved either by colostomy or by enterostomy. The carcinoma should be removed several weeks later. Exploration should not be done because the mere passing of the hand over the bowel is followed occasionally by the escape of intestinal bacteria from the thinned and distended loops of the obstructed bowel. I have heard this statement made at the Mayo Clinic, and my experience leads me to believe that their observations are correct.

Ileostomy for carcinoma of the ascending colon and hepatic flexure, cecostomy for the transverse colon, and colostomy on the left side for carcinoma of the rectum or sigmoid are generally considered proper procedures. A transverse colostomy may be successful because the contents of the bowel here are soft whereas a sigmoidostomy may fail because of an accumulation of the hardened feces there. Because of this choice for the site of the intestinal opening, in no other type of obstruction is it more important that an accurate diagnosis of the location of the obstruction be determined before operation.

Acute dilation of the colon occurs occasionally and is frequently associated with gall stones. In my patients who had this condition gall stones were present. In one of them the gall bladder had ruptured, and an abscess was present under the liver. This type of obstruction, for it will be operated on as such, can be cured by having an assistant pass a long stomach tube rectally into the colon, while the surgeon guides it toward the cecum with the intra-abdominal hand. The tube should be left in from a few days to two weeks, at which time it may be removed. This procedure has been recommended by Dr. W. J. Mayo and was used successfully in one of my cases.

I shall not discuss megacolon and Hirschsprung's disease because they are not true obstructions and will seldom be diagnosed as obstructions. Furthermore, they are not incompatible with life. They should be kept in mind, however.

One important congenital type of obstruction may confront the surgeon at any time. It is the imperforate anus. If there is a bulging at the dimple which marks the site of the anus, a needle or trocar may be introduced not deeper than half an inch. If meconium is obtained, the septum may be incised; the mucosa and skin should be united by sutures. If meconium is not obtained, a colostomy, which may be left for life, should be done.

The most serious type of obstruction is multiple obstruction in which several loops of bowel are obstructed. This generally occurs after previous operations with resulting adhesions, or in incisional hernias, or in umbilical hernias. In any of these conditions several loops of bowel may be obstructed; usually the obstructed loops are close together, but there may be considerable areas of normal bowel between the obstructed portions. Frequently adhesions are found also in the strangulated portions of hernias. In this type of obstruction my highest mortality has occurred, 54.16 per cent. Some surgeons have said that obstruction due to adhesions following a previous operation has a lower mortality because the scar helps in making an early diagnosis. These surgeons have not separated the cases into the two groups, single obstruction, and multiple obstruction; consequently, their better results in obstruction due to adhesions may have been because their patients had single obstruction only and not multiple obstruction. Upon patients who had multiple obstruction I have tried enterostomy for relief of obstruction, I have tried Holden's method of evacuating the contents of the bowel, and I have tried simple relief of the obstructed portions, but none of these procedures has proved satisfactory. The mortality rate has remained high. If obstruction cannot be prevented because a patient will not permit a hernia to be repaired until obstruction occurs or because adhesions cannot be prevented, some more radical procedure must be followed in the handling of multiple obstruction if the mortality rate is to be lowered.

I am very much impressed by a report of

Drs. James C. Owings and Iran H. Smith⁷ who recommend massive excision of the obstructed bowel and believe that excision of the entire mass of obstructed bowel will shorten the operation and give the patient a better chance for recovery. Ten or eleven feet of bowel may be resected safely. The safe point for resection is at the site of marked contraction. The badly damaged portion of the bowel with its toxic contents will then be gone. This method I propose to try in appropriate cases. Dr. William B. Holden³ did an entero-enterostomy or entero-anastomosis in one patient who had "nonstrangulated, obstructed, adherent coils of bowel" and regrets that he did not use the same procedure on two other patients.

The postoperative treatment should be supportive and evacuative. The treatment of postoperative shock can best be combated by giving dextrose intravenously in 5 to 10 per cent solution.⁹ One thousand c.c. may be given slowly during the course of an hour. The solution should be kept at 110 degrees throughout the infusion. Insulin should be given subcutaneously at the rate of one unit (U-20) to 3 grams of dextrose. This amounts to 33 units of insulin for 1,000 c.c. of 10 per cent glucose. "The total amount of insulin is given in two equally divided doses, one fifteen minutes after the beginning of the infusion and the second at the end of the infusion." This may be repeated in four hours if necessary. I have tried giving the insulin intravenously with the glucose but am not prepared to report approval at present. Intravenous glucose two or three times a day without insulin is a very excellent adjunct in the treatment of obstruction with or without shock. Continuous intravenous infusions of 5 to 10 per cent glucose solution at the rate of 150 c.c. to 200 c.c. per hour is very excellent. Full utilization of the glucose can be obtained by giving insulin as follows: Give insulin into tube according to color reactions and test urine every four hours for sugar. Blue—none; green—5 units; yellow—10 units; orange—15 units; brown or red—20 units.

This procedure also takes care of the next most important item in postoperative treatment, which is the maintenance of body fluids. The best method for introducing salines is by hypodermoclysis. About 3,000 to 4,000 c.c. per day is sufficient in the average case. This has been stressed by many

writers, and its importance has been recently forcibly reemphasized by Dr. Coller.² The severe vomiting in intestinal obstruction rapidly reduces the blood chlorides, but the blood chlorides can be replaced by saline so readily that I feel that routine blood chloride examinations are not necessary even though proper. The simplest guide for the intake of fluid is the tongue. A dry tongue means that the patient is not getting enough fluid. An exception to this rule is a patient who is breathing heavily and rapidly with the mouth open. If the tongue is dry on 3,000 c.c. of fluid a day, the patient should receive 4,000 c.c.; and if the tongue is dry on 4,000 c.c. a day, he should receive 5,000 c.c. The need for fluid under the skin is especially important when a high enterostomy has been done because the amount of fluid and chlorides drained through this enterostomy are greater and must be replaced. Outside of damaging the heart by a sudden introduction of too much fluid, there is little danger of giving too much salt solution. Hypodermoclysis should be kept up until the patient is able to take by mouth sufficient water, food, and drink to equal the amount of fluid which he has been receiving by other methods. Many men advise proctoclysis routinely, but because of the difficulty in knowing accurately the fluid intake, I do not use proctoclysis. Furthermore, proctoclysis causes reversed peristalsis, and also causes the patient to be uncomfortable.

Another very important weapon in the postoperative treatment in intestinal obstruction is the use of the stomach tube. It is not only necessary that the bowels be drained of their toxic contents by relief of the obstruction and enterostomy, but it is necessary that the stomach be kept empty of all material regurgitated into it from the bowels. The use of the stomach tube should be started early and should continue until no further fluid can be obtained. This may require several days. Holden, however, claims that he seldom requires the use of a stomach tube after his method of evacuation of the bowel contents. The best stomach tube is the large one, although the Levine tube may be introduced and allowed to remain continuously for several days. When the returned fluid remains constantly clear and free of foul odor, the tube may be removed.

The use of intestinal stimulants such as pituitrin and eserine, of which eserine is the

most efficient, have never yielded highly satisfactory results in my hands, and their value is being questioned generally by recent writers. Recently, however, I have had some success with pitressin. Ten and 20 per cent solutions of sodium chloride have been found to stimulate the tone and contractility of the bowel more than drugs. As much as four to eighteen grams of sodium chloride per day can be used intravenously, says Dr. Alton Ochsner,⁶ who gives credit to Hughson and Ecarff for this method of therapy. Ten c.c. of 10 per cent solution of sodium chloride may be given at each injection until four grams have been given in 24 hours. Lewis' Surgery says that sodium chloride may be given in an initial dose of one gram per kilogram of body weight.

I never hesitate to keep the patient comfortable with morphine, and I have never seen definite evidence of a case harmed by the use of it. I cannot see that it inhibits peristalsis. Some men not only agree with my opinion that morphine does not hinder peristalsis, but even say that it stimulates peristalsis and object to its use because of too much stimulation.

Feeding should be started as soon as the stomach can remain clean of secretions, which lack of vomiting and the stomach tube will demonstrate. In other words, feed when peristalsis has been reestablished.

Although evacuation is an important item in the treatment, little need be said about it, especially if the bowel has been milked

of its contents according to the method of Holden, who seldom gives cathartics and then only on the fourth or fifth day. I favor rest rather than activation. The bowels will frequently move spontaneously. As an item under evacuation, the urine should be watched.

Finally, I wish to emphasize again the time of operation as the most important feature in the treatment of intestinal obstruction. If the mortality is to be reduced, operation must be done early. When the diagnosis is certain, operation should be done immediately. When the diagnosis is doubtful, the operation should be done as soon as other conditions and diseases can be excluded by the various diagnostic methods used in arriving at a correct diagnosis. In intestinal obstruction it is perfectly proper to make a diagnosis with the knife.

BIBLIOGRAPHY

1. Bailey, Hamilton: *Emergency Surgery*, 1:143. Wm. Wood and Company, 1930.
2. Collier, Frederick A., and Maddock, W. J.: Dehydration attendant on surgical operation. *Jour. A. M. A.*, 99: No. 11 (Sept. 10), 1932.
3. Holden, Wm. B.: Surgical treatment of acute intestinal obstruction. *Surg., Gynec. and Obst.*, 50:184-192 (Jan.), 1930.
4. Lewis, Dean: *Practice of Surgery: Intestinal obstruction or ileus*—John A. Hartwell and Henry S. F. Cooper. W. F. Prior Company, Inc., Vol. VII, Chap. 7, 1-70. 1929.
5. McKinnon, A. I. Lincoln: Jejunostomy: A treatment of acute ileus and a preventive of postoperative ileus. *Jour. A. M. A.*, 77: Part 1 (July 23), 1921.
6. Ochsner, Alton: Acute intestinal obstruction. *Int. Surg. Digest*, 12: No. 1 (July), 1931.
7. Owings, James C., and Smith, Iran H.: Massive resection in acute mechanical intestinal obstruction. *Ann. Surg.*, 95:840 (June), 1932.
8. Veldman, Harold E., and Warnshuis, Fred C.: Intestinal obstruction. A review of 95 cases. *Jour. M. S. S.*, 31: No. 6 (June), 1932.
9. Wade, Preston A.: Dextrose insulin treatment of shock. *Jour. A. M. A.*, 90:1859 (June 9), 1928.

NEWER METHODS OF TREATMENT IN SYPHILIS OF CHILDHOOD

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The treatment of syphilis of childhood should be based on a broad knowledge of the pathological changes commonly produced by this disease in infancy, the duration of the infection, and a thorough knowledge of the drugs and methods available. Results of treatment will amply compensate for a thorough study of the pathology in each case. One must strive to design a method of treatment which is fitted to cover all the manifestations. The basic requirement for such an adaptation is a complete knowledge of the natural history and the evolution of the disease.

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It is with this point in view that we will review briefly some of the main points in the evolution of the disease and bring out their bearing on a rational plan of treatment.

The fetus is usually infected from the blood stream of the mother through the placenta into the fetal circulation. This may occur at any time during gestation. The older idea of conceptional syphilis (transmission through the sperm of a syphilitic father to the germplasm, and infection of the mother by the fetus) has been discarded since the question was thoroughly considered by a committee of the French Dermatological Society in 1920. The consensus of opinion now favors the maternal transmission as being practically the only possible mode of infection, still maintaining a small loophole for the possibility of paternal direct transmission in the granular resting forms of the spirochete.

Thus, we believe that the infection of the fetus early in life with a virulent organism will cause abortion usually after several months, for we must allow time for the infection in the fetus to pass through the various phases which we see in extrauterine life. The virulent spirochete enters the fetal circulation probably by direct penetration through the thin membrane separating the fetal and maternal circulations without the formation of a chancre at this point. Thus, we have no delay such as that caused by the formation of the local inoculation reaction in the acquired case. The infection progresses much as in syphilis *d'emble*, syphilis without chancre, as is seen in transfusion syphilis. Following this there is a period of quiescence during which time the spirochete is becoming accustomed to the new host, and multiplication in the blood stream goes on. During this time antibodies are being formed, both free in the blood stream and in the fixed tissues. A period of one to four months is required for the development of these antibodies to such a point that the local deposit of a few spirochetes in any region of the body will elicit a response which we recognize as secondary syphilis. These, of course, are not observed because the fetus is still in utero. Recurrent attacks of these allergic responses in the skin, gastro-intestinal tract, spleen, liver, meninges, etc., take place until most of the spirochetes are destroyed and all have disappeared from the blood stream. A few foci are usually left in the liver, brain, spinal cord, etc., in nonallergic or nonreacting tissue, where they become quiescent. This is the period of latency, and it is during this period that most syphilitic children

are born. This is true heredosyphilis with no manifestations at birth. These children later develop snuffles, caused by a luetic osteomyelitis of the small bones of the nose, Parrot pseudoparalysis, interstitial keratitis, etc. The term latent period is used to cover the time from the end of the secondary responses until some evidence of late activity is seen.

Then we see an infection acquired probably three to five months before birth and manifesting itself as rhagades, pemphigus of the palms and soles, papular syphilide of buttocks, etc. In a third group of cases, we see children infected during passage through the birth canal. They show chancres soon after birth or secondary rashes similar to those seen in acquired cases.

During the latent period the organisms remain in a few non-responsive foci and occasionally a few get into the blood stream, gradually increasing the tissue and blood stream antibodies, until finally the reacting properties of the various tissues are at an extremely high point. Then at any time, due to trauma or without apparent cause, a single or few spirochetes may lodge in a hyperreactive tissue and we have the tremendous reaction to the minute organism, the gumma. It is probable that the tissue which reacts most during all these allergic phenomena is the reticulo-endothelial cells of the blood vessels. The reaction involves the vessels supplying the area and the response which we see is largely due to the loss of blood supply (Warthin⁹).

Destruction of tissue takes place only in the late or tertiary stage, and it is to the prevention of the development of these lesions that we must direct our treatment, not to the clearing up of a transitory early rash which will do the patient little harm. Energetic treatment is necessary early in the disease to prevent contagion only.

Broadly speaking, we see the complement fixing and precipitating substances of the blood serum following the same course in the inherited case as we do in the acquired case, keeping the above body responses in mind. Thus, the child born with early manifestations of the skin almost always has a strongly positive Wassermann or Kahn test. In early infected cases which have passed through the secondary stage and are born in a latent period, the above tests are often negative for three to four

weeks after delivery. The Wassermann usually becomes positive at the end of that time, and maintains a high percentage of positive readings for some months. The percentage of positive readings gradually decreases until puberty is reached, when about forty per cent are positive, about the same percentage as is found in acquired late latent cases.

Despite the multiplicity of gross changes seen in syphilis, the microscopic pathology is fairly uniform and the primary reaction is almost always the same. The primary change in the chancre is the swelling of the reticulo-endothelial cells with the rapid wandering in of mononuclears and plasma cells about the vessels. Thus the vessels are occluded, collateral vessels take up the load and they are in turn involved. This rapid perivascular reaction about many vessels in a small area is the change which gives the chancre its firm infiltration.

The local reaction in the secondary lesion is essentially the same as in the chancre except that the tissue reaction is much more active due to the allergic mechanism. The late manifestations begin like the primary and secondary lesions with the local reticulo-endothelial response. Then follows the typical perivascular mantling of plasma cells and lymphocytes. This is an evidence of a still more active allergic tissue response and involves much more tissue than even the secondary stage. The marked tissue reaction about the larger and deeper vessels causes a thrombosis with the production of anemic infarcts in the skin and probably other organs. Thus we have the destructive action of the later lesions.

The factor which determines whether or not the late manifestations seen in any case will be a gumma or a chronic interstitial luetic fibrosis is the size of the area supplied by the involved vessels.

The occlusion of superficial small vessels will cause a destruction of active parenchyma of the organ involved. The collateral circulation will be sufficient to rapidly absorb the destroyed tissue and replace it with fibrous tissue. In the gumma the major vessel is involved with loss of a large area. Lymphocytes wander in and we have a large inflammatory mass. Thus we see that the difference is only one of size, and is dependent on the type of vessel involved. We have felt that a proper appreciation of the above facts has been lacking in the plan-

ning of an adequate treatment for syphilis in many cases. Syphilis must be considered as a very slow, insidiously developing infection which is contagious but causes the host little permanent damage in its early stages. Only after a period of months or years late lesions occur which are permanently destructive.

The major considerations in the planning of treatment therefore are:

1. The prevention of contagion.
2. The protection of the patient against permanently destructive lesions which may incapacitate him in years to come.

A gross disregard for the slow development and latency of this disease is frequently encountered. Thus we see in an article by Atlee and Tyson¹ in the *American Journal of Diseases of Children*, recommending a short routine of treatment, the following sentence, "A greater number of patients will have to be treated and followed for a longer period of time to prove our point, namely, that this minimum of treatment started immediately after birth is sufficient to cure congenital syphilis in this symptomless stage, the equivalent probably of the early primary stage of the disease." They are recommending a grossly inadequate treatment based on their conclusions in a very few cases followed for only one to four years and based on a premise which is untenable when the evolution of this disease is understood. That is, that the early latent cases are as amenable to treatment as the sero-negative primary cases.

Adequate treatment as based on our knowledge of acquired cases should serve as a basis for the beginning of the discussion of treatment in inherited and congenital syphilis.

The United States Public Health Service Committee,⁸ composed of six of the country's leading syphilologists, on treatment of syphilis states that in early acquired syphilis the treatment should consist of alternating courses of salvarsan and bismuth or mercury for one year without a rest following the reversal of the Wassermann.

In inherited syphilis treatment begun during the first month or so of life should not be stopped until at least the above criterion has been fulfilled. To quote from Stokes,⁷ "Early heredosyphilis is virulent early syphilis. The issue at stake is the child's life and it seems better to adopt adult intensity in treatment." Early vigorous treat-

ment will result in an early reversal of the Wassermann, and a clinical cure. However, treatment begun after several years should be handled as a late latent infection with less active treatment, spread out over several years. It is in these late cases that we see the Wassermann which can hardly, if ever, be reversed.

In children seen during the first few weeks with no visible lesions or with the early manifestations, vigorous treatment should be instituted first to render the child non-contagious, and secondly to kill as many of the organisms as possible before they are walled off in fibrous and lymphoid pockets.

Treatment should be instituted with very small doses of neoarsphenamine intravenously or sulpharsphenamine intramuscularly, combined with, or followed by, mercury by inunction or injection, or bismuth by injection. Fordyce and Rosen⁴ have shown in a long series of cases that mercury bichlorid in oil intramuscularly in ten to twelve injection courses once weekly, followed by arsphenamine in course of eight injections once weekly, is entirely feasible in children. Sulpharsphenamine in aqueous solution and neoarsphenamine in oil may be given intramuscularly, providing the technical difficulty of neoarsphenamine intravenously is insurmountable.

The table following shows an approximate first course outlined for a case seen one week post partum with heredosyphilis.

Neoarsphen. G-0.050 I.V. or same dose in sterile olive oil I.M. 5 days later.	
Neoarsphen. G-0.075	Bis. Sal. $\frac{1}{8}$ c.c. I.M.
1 wk. Neoarsphen. G-0.1	1 wk. Bis. Sal. $\frac{1}{6}$ c.c. I.M.
1 wk. Neoarsphen. G-0.1	1 wk. Bis. Sal. $\frac{1}{4}$ c.c. I.M.
1 wk. Neoarsphen. G-0.1	Continue until 12 given
1 wk. Neoarsphen. G-0.1	
1 wk. Neoarsphen. G-0.1	

The above routine should be repeated at least three times with no rest period. The substitution of old arsphenamine intravenously for one course gives excellent results. This should be given in doses of G-0.1 once a week, dissolved in 20 c.c. of water and properly neutralized with sodium hydroxide. It should be given very slowly. As the patient grows older neoarsphenamine will prove more effective in larger doses: that is, neoarsphenamine G-0.15 at six months; G-0.2 -0.3 from one to two years. Sulpharsphenamine intramuscularly is not quite

so effective, but may be used in the same dosage as neoarsphenamine.

The critical period is during the first few weeks and during this time the baby should be carefully examined every few days. If there is not immediate response to the neoarsphenamine or sulpharsphenamine alone, mercury by inunction should be added. This should be spread under the binder and left on constantly.

The mother should be put on vigorous arsenical medication and the child kept at the breast. The children seem to derive considerable benefit from the mothers' medication. Caution should be used in giving the mother iodide. Some infants are very sensitive to it and will get sufficient in the mother's milk to cause a severe upset.

In cachectic infants the following methods has proven very successful in a few cases. The mother is given a maximum dose of old arsphenamine and in thirty minutes 10-40 c.c. blood is withdrawn, the serum is extracted under sterile precautions and given subcutaneously to the infant. This should be repeated every two or three days, using the paternal or other luetic donor's blood.

Treatment should be continuous or practically so for the first year or eighteen months. Dosage and rest periods must be regulated for each case according to the response to treatment and with special attention to unfavorable reactions. The serum reactions should be checked every one or two months. The large majority of Wassermanns should be reversed after the first course of arsenic (Fleming³ 96 per cent of forty-four infants). Fleming³ also found that the reactions relapsed again unless treatment was continued. We see this same relapse in the acquired case unless treatment is continued.

Some time during the active course of treatment a spinal fluid study should be made, and any evidence of central nervous system involvement should be checked by adequate treatment, such as a switch to old arsphenamine or a few Swift-Ellis treatments; children tolerate them very well.

Since the article written by H. Guillemot⁵ in 1924 on the use of acetarsone by mouth in a syphilitic infant, the attention of the medical profession has been frequently directed to its use in these cases. However, it is only within the past year or so that the dosage has been at all uniform and the technic fairly standardized. The

methods largely used now in this country seem to follow in the main that suggested by Bratusch-Marrain² in the *Arch. für Kinderheil.* Their method which we recommend is as follows:

1st wk. G-0.005 or 1/13 gr. per Kilo daily
 2nd wk. G-0.010 or 1/7 gr. per Kilo daily
 3rd wk. G-0.015 or 1/4 gr. per Kilo daily
 4th wk. G-0.02 or 1/3 gr. per Kilo daily

This is the maximum dose and the course lasts over a period of nine or ten weeks.

The daily dose in infants is given all at once in plenty of water about one-half hour before feedings. In the larger children the dose is divided and given with plenty of water before each meal. The majority of writers so far have given acetarsone without complementary treatment. We feel that results would be much better if the course of acetarsone instead of being followed by a long rest period was followed by a course such as that used in the arsphenamine series, using mercury inunctions or injections, or bismuth by injection. In this manner the method could be made intensive and still not overload the child with a single agent.

In very active early cases I am sure that results would be better if for the first course the arsphenamine routine recommended above was used. Later courses could be continued with acetarsone.

During the past year or so acetarsone has been used intravenously in syphilis of the central nervous system with very superior results. As far as I know, it has not been used in children but I see no reason why the results should not be equally as good.

Tryparsamide has been used with excellent results in preparetic and paretic adults and occasionally in children. It has been given in proportionate dosage and the results have been good.

Syphilitic children seen later in life must be studied carefully to determine whether there is any definite gross changes, and treatment individualized and directed toward relief of the main pathology. The treatment should be started slowly with iodides and mercury or bismuth for one or two months to avoid a Herxheimer reaction, *i.e.*, a focal flare-up after the first

treatments. Following this the treatment should be more intensive with alternating courses of arsenic in the forms of some arsphenamine or acetarsone and bismuth or mercury for about one year. After this one or two courses a year should be given and the patient examined three or four times a year until puberty is well past. Puberty is the time of greatest danger in these cases for it is at this time that we see the permanently destructive lesions such as interstitial keratitis, nerve deafness, etc. Cases which have been clinically and serologically negative for several years and have passed the danger point of puberty may be discharged and seen only once a year for a check-up.

Fever therapy has come into great vogue during the past ten years as an excellent method in the treatment of syphilis of the nervous system. The results in adults have been very good but not quite so satisfactory in children. Robert Lees⁶ reports cures in 21 per cent and improvement in 30 per cent in juvenile paresis. The results reported from the injection of a sulphur product (sulfocin), from typhoid vaccine intravenously, from rat bite fever, etc., have not been entirely satisfactory. However, diathermy and malaria both give excellent results. The majority of observers think that the results are better, due to the higher and the more prolonged high temperature. Results have not been good except in cases in which the temperature has reached 104°-105°.

We have made an effort here to briefly review the natural history and pathology of syphilis and to show how a proper understanding of these facts should be used in the planning of treatment for the child with inherited syphilis.

BIBLIOGRAPHY

1. Atlee, E. A., and Tyson, R. M.: *Am. Jour. Dis. of Child.*, 44:718-727, 1932.
2. Bratusch-Marrain, A.: *Arch. für Kinderheil.* 92:26, 1930.
3. Fleming: Quoted by Stokes, page 1060.
4. Fordyce and Rosen: *Arch. Derm. and Syph.*, 5:1, 1922.
5. Guillemot, L.: *Bull. Soc. de Pédiat. de Paris*, 22:211, 1924.
6. Lees, Robert: *Brit. Med. Jour.*, 336:3685 (Aug. 22), 1931.
7. Stokes, J. H.: *Modern Clinical Syphilology*. W. B. Saunders, 1926.
8. U. S. Public Health Service Committee: The management of syphilis in general practice. Reprint No. 13, Venereal Disease Information, X:2 (Feb. 20), 1929.
9. Warthin, A. S.: *Am. Jour. Syph.*, 14:1-34 (Jan.), 1930.

MEDICAL PARTICIPATION IN PUBLIC HEALTH*

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Each year public health becomes more and more a summation of personal health. The community with a low death rate, after adjustment has been made for racial, occupational and age maladjustment, is one in which the majority of individuals has learned to apply the principles of hygienic living. That community in which the citizens have learned that tuberculosis is a communicable disease and have recognized that tuberculosis breeds tuberculosis, will have the lowest death rate from this cause providing, of course, that adequate facilities for case-finding, nursing service and hospital care have been established. The community with the lowest diphtheria death rate is the one in which the highest per cent of susceptible children have been protected. The city with the lowest general death rate is the one in which the average citizen has learned to accommodate his daily life to the knowledge that the scientific laboratories have generously provided with respect to the prevention and control of disease. If we are to have healthy cities and states, we must have healthy individuals. Public health administration is becoming more and more a matter of personal hygiene.

When the first permanent health organizations were created in this country some seventy-five years ago, little was known of the science of bacteriology and there was no recognition of the prominent part that the individual plays in determining the health and welfare of the community. There had been very little progress in the study of the causative factors since the days of Greek medicine and it was naturally assumed that man's environment was the most potent factor in determining the prevalence of infection. The American health department, both local and state, was created with vast police authority to combat nuisances, offensive trades and, in general, to control all obnoxious matters which might prove inimical to health. Particular heed was given to municipal cleanliness, including, fortunately, the disposal of human wastes. This led naturally to the creation of vast systems of sewerage and sewage disposal and improvements in the quality of our water supplies. There resulted a diminution in the filth-borne diseases such as typhoid fever and other disorders of the alimentary tract; but, contrary to the expect-

tation of the sanitarian, there was no noticeable influence upon the prevalence of other communicable diseases. Not until Pasteur and Koch had opened up the newer knowledge of bacteriology did the sanitarian recognize that it is the individual even more than his environment which determines our health tone. So in recent years public health administrators have come to recognize that to improve the public health we must stimulate a reaction on the part of the individual citizen to our health educational program, must provoke a response so that he will daily practice the principles of prophylaxis. The early American health department was clothed with tremendous police authority which it freely exercised in its fight against insanitation. The modern health department is organized to pursue vigorously a program of health education in which the physician and dentist must join hands with the health educator and the layman.

There are some public health officers who feel that certain of the medical services which have become a heritage of the health organization should be gradually transferred to the family physician in his own office. They believe that such a program will extend the influence of the community health organization, will multiply the opportunities for health education and will result in the conservation of both life and money.

The watchword of the day is economy. We have been told of the high costs of medical care and at the same time informed of the low average income of the physician. The very best way to reduce the high cost of illness is to prevent the individual from becoming ill. A slight increase in expenditures for preventive medicine will materially reduce the cost of caring for the sick. In the future medical practice will be largely

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of a preventive character. The office of every prepared physician should in fact become a health center from which will be dispensed not only knowledge regarding the prevention of disease but service which under any circumstances is available only at the hands of the qualified physician. Each local community has but one health officer. There may be scores or even thousands of practicing physicians each one of whom should become an agent or deputy of the health department.

Programs have already been instituted in three rural counties of southwestern Michigan (Barry, Allegan and Eaton) under the direction of the W. K. Kellogg Foundation and in urban Detroit by the Wayne County Medical Society and the Detroit Department of Health, with the view to securing the active participation of the practicing physician in providing preventive medical services for the public. The objective is to have the family physician care for his clientele in health as well as in illness. In case of illness a physician is better able to serve his patient if he has a complete understanding of the patient's mental and physical characteristics. There is likewise need of re-educating the public to look toward the physician in private practice for such preventive services as diphtheria protection, smallpox vaccination and periodic health examination rather than to depend upon public agencies and free clinics. Preventive medical services constitute a purchasable commodity; an investment which yields generous returns. The willingness with which the public accepts such services will largely determine the individual's future health status. Unfortunately in many communities a certain degree of suspicion and antagonism has developed between the county medical society and the health department. The former probably frowns upon the real or mythical inroad of socialized or state medicine while the latter has failed to appreciate the important part that the family physician if properly trained can play in extending the community health service. The health officer may have overlooked the viewpoint of the practicing physician, may have permitted his organization to develop so as to interfere with the private prerogatives of the physician and may have enticed into free clinics individuals who can well afford to pay the family physician for his service. There is need of a more common under-

standing between the organized medical profession and the local health agency, both of which have a similar purpose, the preservation and conservation of human life.

The programs already referred to do by no means constitute the sole effort to bring about a better state of public health through the active support of the practicing physician. In Flint, Pontiac, Saginaw, Jackson, Battle Creek and Muskegon the medical societies have undertaken somewhat similar projects with local variations in application. Of one thing we are convinced and that is that the organized medical profession can make a material contribution to improvement in public health. There are some health officers who declare that the coöperation of the family physician cannot be effectively secured. To such a declaration we most vehemently object as it has been amply demonstrated that as many as 1,100 physicians can be organized to provide suitable service in a single community. The county medical society has neither the funds nor the personnel equipped to carry on a community health service and there is therefore need for a local health organization with a full-time health officer fortified with adequate funds. Every county in Michigan should have a whole-time health department unless the county be so sparsely settled that it becomes economically advantageous to combine with one or more other counties into a health district. At the head of such county health organization there should be a public health administrator trained in preventive medicine, aided by one or more public health nurses. There should also be sufficient personnel to provide a sanitary inspection service and the necessary clerical help. Diagnostic laboratory service should either be provided locally or made available by some nearby institution. In addition to his training in public health work the principal qualification for the health officer should be a sympathetic regard for the viewpoint of the practicing physician and the ability to harmonize his program with that of organized medicine. Those who assume that the practice of preventive medicine in the physician's office warrants the curtailment of funds to the local health department are bound to be disappointed. If the health department withdraws from the co-operative plan, disaster will result. The two groups, the medical profession and the health agency, must work together and rec-

ognize their common interest in the promotion of positive health, the prevention of disease and in service to the public, more especially the growing child.

This newer approach to preventive medicine through the family physician, which has been long discussed but only lately actually applied, involves, first, a group plan; second, the extension of local public health organization and, third, compensation to physicians for service rendered indigents.

The group plan should be controlled by the county medical society, which through its authorized committee should establish a procedure with the coöperation of the local health officer. We feel that the county should be the smallest unit for the health organization. There should be a county health officer whose jurisdiction includes the entire county. The county medical society should concern itself with the preparation of the physician so that each man who co-operates agrees to abide by the program and prepares himself to practice modern preventive medicine.

The health department should concern itself with the preparation of the public. While general health education such as the use of the radio and the printed and spoken word is profitable, the best results can be obtained by employing properly trained public health nurses as health educators to carry the message of disease prevention to the individual parent in his home. A program for the eradication of diphtheria by securing the protection of children of susceptible age, more especially the infant from six to twelve months of age and the pre-school child, affords a unique opportunity of placing into effect a program of medical

participation in public health work. A public health nurse visiting the home of each child as it reaches the age of six months serves to bring about a contact between the family and the coöperating physician. In Detroit such a plan has provided for the immunization of more than one-third of the children before they attain the age of twelve months.

Each physician should receive some compensation for every service rendered. When the parents are financially able they should pay the physician direct but for indigents the community through its health department can well afford to set aside each year a sum with which to pay an honorarium to the coöperating physician for each service where the parent is unable to pay.

Using the diphtheria prevention project as an entering wedge the program may readily be expanded so as to include protection against smallpox, provision for an annual health and dental examination and may even be extended to the control of tuberculosis and the venereal diseases and to other phases of preventive medicine.

It has been found that such a program of medical participation in health work is profitable to the physician, to the public and to the health department. It costs less to prevent than to cure. In conclusion we would urge that every county medical society in Michigan strongly support the establishment of a properly organized and personelled county health department which will work wholeheartedly in the interests of the local medical profession and thus serve the public to maximum advantage.

SCIATIC NEURALGIA: CLINICAL ENTITY: ITS SYMPTOMS, DIAGNOSIS AND TREATMENT: REPORT OF SIXTY CASES

A study of sciatic neuralgias and a review of sixty cases led EMIL D. W. HAUSER, Chicago, to conclude that this condition is not a true neuritis but an essential reflex sciatic neuralgia, that the referred pain is not confined to the sciatic nerve, that the origin of these pains may be attributed to muscular insufficiency or physical strain and that any environmental condition which strains the nervous system acts as a contributing factor. The author's ideas are in accord with Linstedt's views that chronic irritations result from functional fatigue; that functional

fatigue, in his cases, was secondary to organic alteration of normal body statics; that the irritation of chronic fatigue may make the nerve of the involved part hypersensitive and produce pain along the course of the nerve. When such pains occur in the region of the sciatic distribution they are called sciatica. These views were confirmed by Haglund's vast experience; he also found that the removal of functional insufficiency by means of orthopedic measures cured the sciatica. In the sixty cases that the author reviews, relief was obtained in each case as soon as a functional compensation was reestablished. These observations cover a period of seven years, during which time the patients have remained well.—*Journal A. M. A.* (May 5, 1934).

PITFALLS IN THE X-RAY DIAGNOSIS OF BRONCHIECTASIS
WITH IODIZED OIL INJECTIONS

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With the advent of lipiodol and other iodized oil injections, the x-ray diagnosis of early bronchiectasis, which, only a decade ago, was indeed difficult, has been greatly simplified. The x-ray interpretation is still fraught with some difficulties and undoubtedly a few erroneous diagnoses of bronchial dilatation are being made, simply because the mechanical knowledge, which is usually considered uninteresting, is not being applied. The iodized oil is injected too frequently under excessive pressure. It is forced into the bronchi and not allowed to run in. The roentgenologist is over-anxious, in interpreting the x-ray films of children, to find evidence of bronchiectasis, especially when there is a history of recurrent attacks of cough, probably associated with a chronic bronchitis or pneumonitis, and he is still more anxious to find evidence of bronchial dilatation when the referring physician states that there is a chronic bronchitis with or without emphysema or asthmatic symptoms. In some of the cases where bronchiectasis has been established by the x-ray diagnosis there has been no sputum, indicating that there is little or no infection. To this condition the term "bronchiectasis sicca" has been applied.

In this paper the technic of bronchoscopic injections with iodized oil is to be discussed, since, in many instances, this method is particularly adaptable to children from whom no coöperation can be expected. If properly done, the bronchoscopic method is a very reliable one; but the technic of execution is very difficult. In selected cases it may be used advantageously in adults. The supraglottic method or even the intra-tracheal method requires much less effort, time and training. Hence, we believe that bronchoscopic injection of iodized oil is indicated only when the coöperation of the patient is not assured or where one particular area of the lung is to be investigated for evidence of disease. Of course, there are some contra-indications to the exploration of the bronchial tree with iodized oil even though the mechanical procedure is innocuous.

If diagnostic films are to result, teamwork of a skilled bronchoscopist and a radiologist is essential. The oil should be allowed to flow in the bronchi on an x-ray table, preferably a fluoroscopic table. The x-ray exposures can then be made without moving the patient about, as movement has a tendency to distort the outline of the filled

bronchi and might stimulate the coughing reflex. We have observed, in a few instances, that the oil is expelled from the bronchi due to normal peristaltic-like waves. Hence it is always desirable to make the x-ray exposure immediately after the oil has entered the lung tissue under investigation.

Preparation of the Patient.—The child should be hospitalized and a sufficient amount of morphine or a barbiturate given to produce a narcosis. Respiration must be regular even though it may be reduced. The bronchoscope is passed and the iodized oil is allowed to flow in at body temperature, a very little at a time, preferably under fluoroscopic control, as it is desirable at all times to know how much oil is actually being used. A more uniform result in the filling of the bronchi can be obtained if it is done with the use of a mercury or water manometer. Five-tenths c.c. of oil or more may be used at a time, using both the manometer and fluoroscope for accurate control during the introduction of the oil into the bronchi. By using a double control of this kind a few of the mechanical errors mentioned above, namely, too much pressure and too much oil, can be eliminated. Iodized oil should *flow* into the bronchus. It should *never be forced* in with pressure. As a matter of fact, the force of gravity and the weight of the oil are sufficient to outline the bronchi. Too much pressure forces the oil into the terminal air cells or alveoli and the shadows on the x-ray films show up as meaningless globules with hazy outlines. It must be borne in mind that these shadows are distortions of normal tissue. Too frequently they have been interpreted as indicating a diseased condition. When too much oil is used, the x-ray film presents many superimposed shadows of filled alveoli, simulating an outline of a small abscess cavity or slightly dilated bronchi.

In a recent study of children, injections were made without fluoroscopic control and without the use of a manometer. The roentgenologist interpreted the films without knowing the method of injection. Consequently bronchiectasis was a common and frequent diagnosis. One day one of the attending physicians questioned the interpretation of bronchiectasis and asked this question: "Is oil injection infallible in demonstrating bronchiectasis?" This was the inspiration for the dog experiment which is recorded herewith.

Dog Experiment.—A medium sized Boston bull terrier, weighing about 20 pounds, with an injured right shoulder, was given 7 grs. of nembutal, 5 grs. one and one-half hours before bronchoscopy and 2 grs. one-half hour before. A preliminary x-ray film of the chest was made after the dog had been placed on the fluoroscopic table. This film demonstrates the injured shoulder, namely, a fractured humerus and a calcified shadow in the stomach, probably a piece of bone. The lung fields are clear throughout. As bronchiectasis is a common disease in dogs, it was necessary for us to exclude this possibility immediately. The bronchoscope was passed and the mucous membrane of the trachea and bronchi was found to be clean and free from injection. A tube was attached to a water manometer connecting the bronchoscope and the syringe used to inject the lipiodol. The internal resistance of the apparatus had been tested previously and was found to have one-half to three centimeters of water pressure, depending upon the rapidity with which the plunger was forced up and down in the syringe. The lipiodol was forced into the bronchoscopic tube under 14 to 20 cms. of water pressure. This was done under fluoroscopic control and the air in the bronchoscope was allowed to escape through the bronchoscopic shield. As soon as lipiodol appeared at the tip of the bronchoscope one additional c.c. of lipiodol was injected. The reading of the manometer at this time showed 20 cms. of water pressure. The injection was stopped and the fluoroscopic study revealed that approximately 3 inches of the smaller bronchi had been injected although only 1 c.c. of oil had been used.

(Dr. Hasley showed a number of films demonstrating the injection of the bronchi with lipiodol which was controlled by a tube

connected with a manometer. The successive films exhibited exposures made first after the initial injection then after 3 additional c.c. of oil showing a pressure up to twenty-five; then an additional 3 c.c. of lipiodol increasing pressure to thirty; 5 additional c.c. and then 6 additional centimeters, the pressure being twenty-eight and twenty-seven respectively.—Editor.)

At the conclusion of the experiment 18 c.c. of oil were recovered from the manometer tube and 3 c.c. from the bronchoscope. A total of 25 c.c. had been injected, which left 4 c.c. to be accounted for. *This represents the actual amount introduced into the lung field.* None of the oil had entered the stomach. The shadow of increased density in the region of the stomach was present on the preliminary plate. During the last few minutes of the experiment oil did enter the stomach but was found to flow back into the esophagus as soon as the bronchoscopic shield was released. This was noted under the fluoroscope. The last films show that some of the oil had entered the small alveoli and that many of the shadows were beginning to overlap and to develop into meaningless shadows. On film No. 7 the shadows on the right of the midline are overlapping and demonstrate, we believe, convincingly, how easy it is to misinterpret the shadows and to make a diagnosis of dilated bronchi when, in reality, the condition is due to confusion of the superimposed shadows.

The authors realize that there are other factors which must be included in the complete study of the possible pitfalls, such as, viscosity of oils, influence of various barbiturates and opiates on the involuntary musculature of the bronchi; the amount of relaxation of the muscles due to nerve paralysis following the local application of cocaine or novocaine; the changes in the outline of the bronchi in inspiration and expiration or the motor physiological changes during normal respiration; as well as physiopathological changes in the bronchi due to associated disease conditions, such as asthma and emphysema.

In conclusion, we wish to emphasize again that there are two factors, commonly overlooked, which may result in erroneous interpretations in lipiodol diagnoses—too much oil and too much pressure.

ARSENIC PASTE IN CANCER OF THE SKIN*

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Arsenic as we all know is a compound that dates from ancient and medieval times. It has been used in any number of instances, both as a therapeutic drug, and as a means of human destruction. It is now used by the physician and the manufacturer, the former in the treatment of syphilis and skin conditions, the latter in the making of dyes, glass and papers.

In reviewing its early history, we have found that the first definite references as to the use of arsenic date from 460 B. C., the time of Hippocrates, the father of medicine, born on the isle of Cos, and who was the founder of the Hippocratic school of medicine which initiated a system of therapeutics that is based upon prognosis and upon respect for the endowments of nature. He used arsenic in catarrh internally and mentions the orpiment, stating that it is an excellent ingredient in a paste for the treatment of ulcers.

Democritus, who was an admirer of Hippocrates, and incidentally a traveler, philosopher, writer and metaphysicist, although not a practitioner of medicine himself, is claimed to be the first of a long line of alchemists to have used the metal in attempts to convert base metals into gold.

From the death of Democritus, till 40 A. D., arsenic remains unmentioned, because the physicians during all this time, no matter what great school they were graduates of, were not permitted to use the "poison" and others allied to it in their actions, by the laws of Plato. It remained, however, for Dioscorides of Cilicia, of the Alexandria School, to enter arsenic in his treatise on *Materia Medica*, which included 500 plants and minerals and was considered a fairly voluminous work for that time and age. It was he who mentioned the poisonous effect of arsenic on the intestines. Aurelius Cornelius Celsus, alleged to have been born in Narbonne about 25 B. C., author of that much discussed work of art, *De Medicina*, makes mention of the crusting and scaling which follows the use of arsenic. It is worthy of note to state that *De Medicina* is a work of surprising literary art, being the first medical thesis in Latin, and of great historical value, since from its appearance the official use of Latin in medicine takes form.

Galen, born in Pergamum in 130 A. D., was tutored in the Alexandrian tradition by Satyrus, a pupil of Quintus. He was a firm upholder of Hippocrates. Not only a physician, but also a pharmacist, a man of science, philosopher and a great leader in his time, he called attention to the escharotic properties of arsenic, and advocated its use for putrid ulcers. He wrote that it was as caustic as fire and mixed with quick-lime made an excellent depilatory.

Avicenna, the Hippocrates and Aristotle of the Arabians, born 980 A. D., differentiated, for the first time, white arsenic from the sulphides (orpiment and realgar). After Avicenna, arsenic played the great part in the alchemists' lives in formulæ for synthetic gold.

As a poison, white arsenic or arsenious acid was very popular in mediæval times, since it possessed all the properties of diabolical methods for ending life. Its properties of being colorless, tasteless and easily incorporated with articles of food were only too well known to the sorcerers.

In the treatment of skin cancer, arsenic paste was first mentioned as an escharotic in the writings of Hippocrates, who described it in the form of the yellow sulphide of arsenic or orpiment. As we have mentioned previously, Galen, knowing the escharotic properties of the drug, recommended its use in the treatment of indolent ulcers; however, it is not known whether he used it himself in this role.

Among the alchemists, Albertus Magnus (1193-1280) was the first one to prepare metallic arsenic.

It is not known who first reasoned that there might be something of good in this powerful poison and who daringly experimented with it as a therapeutic agent. About the middle of the eighteenth century, how-

*The Chairman's address read before the Section of Dermatology and Syphilology of the Michigan State Medical Society at its annual meeting in Pontiac, Michigan, September 23-24, 1931.

ever, there appeared a remedy called "Tasteless Ague and Fever Drops." In 1786, a London physician by the name of Thomas Fowler, was led to investigate these ague drops and to formulate a solution which he considered to be a satisfactory imitation. This is called Fowler's solution to this day.

Some of the old recipes for the preparation of arsenic pastes are interesting. One of them is as follows: Arsenious acid, 2 drams; cinnabar, 2 drams; ashes of old leather, 8 grains; dragon's blood, 2 grains; make into a paste with water or saliva.

Jean de Vigo, in the fifteenth century, used ointments containing arsenious acid, red and yellow sulphide of arsenic, litharge, alum, mercury, sulphur, vitriol, camphor, antimony, incense, myrrh, aloes, sanguinaria and black hellebore in ulcerative lesions. (Bechet.)

Until the eighteenth century, arsenic as a local cauterizing agent was used in haphazard fashion by Fabrice de Hilden, P. J. Faber, Magatus, and others. It was condemned by Junker, Boerhaave, Triller, Lieutand, Heister, Richter, and Stoll.

Rousselot, a chiropodist to the Dauphin, published in 1769 the results of several years' experience with arsenical pastes in cancer; to him, therefore, must go the credit of priority in the use of this method. His favorite application consisted of cinnabar, sanguinaria, and arsenic; this was mixed in the palm of the hand, saliva being used as a diluent; the paste was then applied to the cancer and kept in place with a spider web. (Bechet.)

Twenty years later, a monk, Friar Come or Cosme, and his pupil and successor, Friar Bernard, used a formula with which they were very successful in the treatment of patients with cancer; it consisted of powdered arsenic, 5 grains; cinnabar, 25 grains, and powdered burnt shoe soles, a pinch. They had purchased this formula from a barber surgeon for 3,000 livres.

According to King, Laurent Theodore Bielt, Swiss physician (1781-1840), was the first of the more modern physicians to use arsenical paste in the treatment of skin cancer. In his train there follows a long list of physicians who used arsenic pastes for this purpose. In this list there are many illustrious names.

Bechet mentions the fact that Emmanuel Patrix, in 1816, published a monograph entitled "The Art of Applying Arsenic

Pastes" with a clear and definite discussion of indications and contraindications for its use, and that John Marshall used arsenical paste successfully on a cancer in the right inguinal region in 1817.

Ferdinand Von Hebra, the Austrian dermatologist (1816-1880), used an arsenical paste that was a modification of Friar Cosme's. Hebra modification was:

Acid. arseniosi.....	1 part
Hydrarg. sulphuret rub.....	5 parts
Ungt. aquæ rosæ.....	40 parts

Johann Friedrich August Von Eschmarch, the German surgeon (1823-1908), employed arsenic powder both internally and externally, the former because the medicine was supposed to promote the disintegration of albuminous compounds. For the latter purpose the powder was used instead of a paste. The powder was thickly strewn over the ulcer or wound every day; its action was powerfully escharotic but painless and neutralized the fetor of the sore.

Alexander Edwin Marsden, English surgeon (1832-1902), introduced a caustic paste consisting of two parts arsenious acid, one part powdered gum acacia, and water to make a paste. In 1869, Marsden wrote a paper entitled "A new and Successful Mode of Treating Certain Forms of Cancer." At this time he had observed 6,000 cases in the cancer hospital of London and had come to the conclusion that skin cancer was best treated by the use of caustics. He had employed his method for seventeen years before publishing his results. His book contains detailed reports of twenty cases in which his paste was successfully employed; among this number were several large epitheliomas involving the entire lower lip. This treatise gave impetus to its widespread use in England and America and many conservatives used it with excellent results.

Moritz Kohn Kaposi (1837-1902), the Austrian dermatologist, Hebra's pupil and son-in-law, further modified his mentor's paste by substituting factitious cinnabar for the red sulphuret of mercury.

Koebner in 1883 reported that he had cured a case of multiple sarcoma of the skin by injecting each of the small tumors with Fowler's solution. This is interesting although not strictly relevant to our subject.

Unna (1850-) reported successful treatment of epithelial new growths by the

continual application of mercury ointment containing 5 per cent arsenic. He said the growth disappeared by absorption as in spontaneous cure.

The treatment of cancer by arsenic has been both internal and external. At one time the administration of iodide of arsenic was held by competent authorities to be capable of diminishing the size of cancerous tumors, but the treatment has now lost whatever credit it once possessed. As a caustic, arsenic was used for the destruction of cancerous tumors even by the ancients, and throughout the course of medical history, examples may be found of faith in its propriety and efficacy. Arsenic forms the basis of most of the secret cancer cures which have enjoyed popularity. Before the advent of the x-ray, radium, and other modern means of treatment, arsenical pastes were popular remedies in the hands of ethical physicians, but in recent times the practice has fallen largely, but not exclusively, into the hands of quacks. Most of these arsenical caustics are excessively painful and, if applied over a large surface, involve the risk of producing poisonous effects, and their use has even been characterized as "a murderous practice."

Plunkett's caustic, an empirical remedy of great repute, consisted of *Ranunculus acris* and *Ranunculus Flammula*, each an ounce, bruised and mixed with a dram of arsenious acid and five scruples of sulphur. The whole was beaten into a paste, formed into balls, and dried in the sun. When used these balls were rubbed up with yolk of egg and spread on pig's bladder.

Robinson uses two strengths: (1) Equal parts of arsenious acid and powdered acacia, and (2) two parts of arsenious acid and one part of powdered acacia.

From 1900 to the present time, articles have appeared in the literature from time to time, some extolling the virtues of arsenical paste in the control of skin cancer, and others condemning it as strongly. Of this large number of articles of which the indices make mention, I have selected only a few, partly because only a small number of these are available locally, and partly because these are sufficient to show the trend in the use of arsenic pastes.

In the *Journal of the American Medical Association* for July 13, 1901, M. L. Heidingsfeld discusses the treatment of cutaneous cancer and makes the following statement:

The treatment of cutaneous cancer has been one of the most serious and difficult problems with which the profession has had to deal. The remedies which at one time have been highly extolled, at another, severely condemned, are exceedingly varied in nature and innumerable in number. Two remedies which are received with much favor today, zinc chloride and white arsenic, have been extensively used, the one for scores of years, the other, for centuries. The use of these two, in the hands of certain specialists, was attended at least in several cases by eminently successful results; in others, there was absolute failure, if not death of the patient. . . .

From this I infer that arsenic possesses not only an elective action, exerting its chief influence on the weaker and less stable pathological tissue, sparing the more resistant surrounding normal tissue, but also exerts a specific influence over cancerous tissue whereby it inhibits its growth and prevents its further spread and development without entailing its direct destruction.

The method of treating skin cancer by the use of arsenical pastes has not passed entirely into oblivion even at the present time. Sir Norman Walker in his "Introduction to Dermatology" (New York; William Wood and Company, 1921) speaks very highly of it. Stelwagon in his "A Treatise on Diseases of the Skin" (Philadelphia; W. B. Saunders and Company, 1921) states that he employs the method frequently and endorses it fully. Darier in "A Textbook of Dermatology" (Lea and Febiger, 1920) calls it "the most convenient and most desirable caustic, which has yielded the largest number of durable and good esthetic results in my experience." Sutton, in "Diseases of the Skin" (St. Louis; C. V. Mosby and Company, 1926), gives a full page to the explanation of the method, and stated that, when properly employed, excellent results followed its use. Ormsby, in "A Practical Treatise on Diseases of the Skin" (Philadelphia; Lea and Febiger, 1927), describes the technic in full and states that the treatment is effective.

William Allen Pusey, in his "The Principles and Practice of Dermatology" (D. Appleton and Company, 1924), says:

"The use of caustics, especially of caustic pastes, is not generally looked upon with favor. The reason for this, I believe, lies largely in the facts, first, that it is different from ordinary surgical procedures, and, second, that it is used and exploited to a great extent by irregular practitioners.

"The method has been advocated in this country notably by Robinson, and my experience with it enables me to indorse it fully. Like any other method of treatment, it must be radical to be successful and must be properly carried out. The great advantage of the use of caustics is that they produce a zone of violent inflammation around the mass which they destroy so that they destroy not only the epitheliomatous tissue actually cauterized, but, through the inflammatory process excited, also outlying masses

which have not been actually reached by the caustic.

"In my experience both (Marsden's and Bougard's pastes) give equally satisfactory results."

George C. Andrews in "Diseases of the Skin" (W. B. Saunders Co., 1930), says:

"Treatment by arsenical paste or zinc chloride paste is painful and not generally useful, but certain persistently recurrent, heavily irradiated, infected localized growths can be cured by no other methods."

The most complete report on the use of arsenical pastes in the treatment of skin cancer was made by Charles W. Strobell in the *New York State Journal of Medicine* for November, 1921. He writes under the title "Painless, Non-disseminating Chemical Removal of Inoperable Cancer of the Breast and Axillary Nodes with Report of the first Forty Cases (1898-1920)." In this article, he tells how he came to use arsenical pastes in the treatment of skin cancer. A patient came to him with a scirrhus carcinoma of the left breast urgently in need of surgical excision. The patient refused operation but wished him to make a caustic application. This he refused to do on the grounds that he was not familiar with the use of caustics, had no faith in the method, and that he refused to experiment. In the end, however, she being an old-time patient, he prom-

ised to do what he could. He looked up Marsden's formula and used it with temporary success. But in four months, the patient came back with a recurrence of the cancer, far worse than the original. Again he applied arsenical paste, this time for a longer period, and got a complete clinical cure so that the patient lived for eight years after that, when she died suddenly of heart disease. The outcome of this matter was that he used it regularly after that. His observations in this paper are based upon twenty-two years' experience. His conclusion is that the end-results or average duration of life following the chemical removal of surgically inoperable cancer of the breast, compares favorably with those obtained by surgery when the cancer is still operable.

However, it is generally agreed that the use of modern physiotherapeutic methods, namely, cold spark, x-ray, and radium are to be preferred for the treatment of cutaneous cancer.

Great assistance was given, in the accumulation of the historical matter in this paper, by the class of 1932 of the Detroit College of Medicine and Surgery especially through the efforts of A. Frank Merlo and Bert Van Derkolk.

A STUDY OF NEUROCIRCULATORY INSTABILITY

RUTH HERRICK, M.D.†

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It would seem quite out of place for me to present to this group any new malady or a long series of statistics, but I can well take this opportunity to play the rôle of a dermatomytid and discuss with you some of the thought trends of the dermatological focus from which I sprang. My discussion of neurocirculatory instability will bring up for clarification several moot points, and if anything is gained it will be in a candid discussion of these points. (For use of term neurocirculatory instability, see Becker.²)

There is a recent tendency throughout medical centers here and abroad to teach a functional³ type of dermatology instead of the older morphologic type, just as Alvarez¹ in internal medicine is teaching a functional evaluation of the patient with nervous indigestion. This reverses the old order of things, and one looks more at the patient as a whole, and less at the part of his skin dis-

figured with lesions. I do not mean to say that skin lesions are not studied with an analytical eye, but after the customary diagnosis is made of dyshidrosis, pruritus ani, or neurodermatitis, the patient himself and his adjustment to his environment are put under careful scrutiny to give an inkling as to what kind of a fellow he is, to have such a problem on the skin.

Such inquiry based on a group of 185 patients brings out many interesting findings:

†Dr. Herrick is a graduate of Rush Medical College, 1927. She interned at Blodgett Memorial Hospital, Grand Rapids, Michigan, 1927-28. The three following years she spent in the Division of Dermatology of the University of Chicago Clinics, having the rank of Instructor. Dr. Herrick is limiting her practice to Dermatology and Syphilology. She is a member of the staffs of Blodgett Memorial Hospital and Saint Mary's Hospital.

This patient is usually from the "white collar class," and is the executive of home or office; he is more often a woman than a man (134 women to fifty-one men among my patients, of the past two years); he is organically sound, with a possible tendency to a low blood pressure, and often a low basal rate; he comes from a family some of whom are unusually alert, high strung, and ambitious, and in whom eczema, hay fever, and vasomotor rhinitis are seen. He shoulders his and others' burdens over-conscientiously, and is inclined to worry over them. He may be insensible to fatigue and work for years on nervous tension for fear of the flat let-down feeling of relaxation, or, more rarely, after a long period of stress and strain he may relax and the eruption appear only during the period of recovery of nervous energy.

Having generalized our patient, let us see what skin conditions predominate. First in frequency of occurrence is the classical neurodermatitis. But before discussing the patient with typical findings, I wish to clarify and enlarge the customary concept of neurodermatitis. In my student days the term was used as an alternate for lichen simplex chronicus of Vidal.⁶ Later, I came to see that many cases of chronic eczema⁷ were in reality patients with neurocirculatory instability, and their dry flexural eczema was accompanied by itching quite out of proportion to true eczema.

Here in Michigan I see an undue proportion of the Kreibich type of exudative neurodermatitis in which is seen the picture of true eczema with punctate vesiculation, surmounting chronic plaques of bluish papules, and finally scaling. Such plaques most frequently occur on the dorsa of the hands, and flexors of the wrist.

Two patients will illustrate the personality study frequently encountered in these conditions:

Mrs. J. J. has held a responsible position in a local department store, and has been in perfect health. She put in long hours (until the blue eagle arrived), but does not consider herself fatigued. A year ago she was married and has been doing all of her own housework before and after her working day. Several months after assuming this double burden she began to have a pruritic area in the nape of the neck. Local remedies in the hands of various physicians have proved futile. Though not aware of being fatigued, she says that little things irk her during the day, and cause her excessive worry. The lesion on the neck just below the hair line is 3x5 cm. across and is seen to be a well de-

fined lichenified plaque with no erythema. There is no seborrhea. Pruritus is more intense than one would expect from the appearance of the lesion.

An example of the Kreibich type of neurodermatitis is seen in Mr. H. W., a lumberman. He is robust and intensely active. Physical examination and serological tests are normal. He had a clear skin, except for an occasional follicular eruption in seborrheic areas, until the market for furniture slumped. Since then he has had violaceous indolent plaques with frequent outbursts of pruritic vesicles, on the dorsa of both hands, and occasionally on the forearms and thigh. He is brooding continually on his decrease of business, and expects to lose his home. The only real improvement occurred when he got an order for lumber and went to the north woods for a few days to select timbers. Such a person comes closer to a neuropathic personality than most.

Next in frequency among my patients showing neurocirculatory imbalance comes the group having palmar and plantar dyshidroses. Patients in this group must be closely differentiated from those presenting dermatomycosis. Microscopic examination, while not infallible evidence, is a great help in ruling out fungus infections, but it is my personal view that clinically one can not distinguish the two conditions. Here the personality of the patient may be an aid to diagnosis, for many patients with negative laboratory findings, long treated for dermatomycosis, will have the eruption only during periods of stress and strain, and will spontaneously recover when able to relax. I believe this condition to reflect an inherent, probably inborn, protoplasmic instability. Such a condition was spoken of by Dr. Warthin as protoplasmic unrest, resulting in signs of neurovascular imbalance, but in which every cell participates.⁴

Other well known entities are being continually added to this major group of neurovascular imbalance. Thus, urticaria in adults more frequently results from sympathetic nervous system fatigue than from the previously oft-stressed food allergy. True, food allergy does cause hives, but more often than not the urticarial adult will prove negative to a most searching series of skin tests.⁸ He will diet for this and that fancied cause, but will not improve until in desperation he remains at home or otherwise obtains the rest and freedom from stress that is long overdue, whereupon the conditions clears.

A similar situation exists in patients with pruritus ani and pruritus vulvæ. Many such people have no demonstrable pathologic condition, but have lived for years under exhausting nervous tension, and sometime in

their career the weakest link gives way. Itching is the result. This condition is particularly common among school teachers and one can see why. Enforced attendance at summer school to advance or maintain a position is poor compensation for days of gruelling patience, and nights of examination papers.

What is the significance of such a study? Chiefly this: We see in a large group of individuals having diverse skin conditions, the common element of sympathetic nervous system maladjustment creating excessive pruritus. In such patients local treatment is frankly only palliative and permanent relief is obtained by aiding each person to solve his own situation by frankly understanding the cause and the factors involved, and, in addition to local therapy, presenting for his acceptance a logical program of daily relaxation.⁵ This is not easy, and many patients would rather undergo continuous lifetime annoyance from local treatment alone, than admit they were working and worrying too hard for their own nervous organization. On the other hand, patients of this group are usually intelligent and have passed from doctor to doctor with much futile local ther-

apy, and they do respect a thoughtful analysis of their problems. Such people usually make satisfactory improvement and form the basis of my belief in the validity of this grouping.

SUMMARY

The designation neurocirculatory instability applies to a heterogeneous group of organically normal people presenting diversified skin conditions: neurodermatitis, dyshidrosis, urticaria, etc. These people are of the type who exhaust the reserves of nervous energy and show this fatigue by one of the above eruptions.

Neurocirculatory instability is a functional diagnosis.

BIBLIOGRAPHY

1. Alvarez, Walter C.: *Nervous Indigestion*. New York, 1931, Paul B. Hoeber, Inc.
2. Becker, S. Wm.: Dermatoses associated with neurocirculatory instability. *Arch. Dermat. & Syph.*, 25:4, 655-659 (April), 1932.
3. *Ibid*: p. 682.
4. Becker, S. Wm.: Personal communication.
5. Jacobson, E.: *Progressive Relaxation*. Chicago; University of Chicago Press, 1929.
6. Ormsby, Oliver S.: *Diseases of the Skin*. Ed. 3, Philadelphia; Lea and Febiger, 1927, pp. 312-316.
7. Sulzberger, Marion, Spain, W. C., Sammis, Florence, and Shanon, H. I.: Studies in hypersensitiveness. I. Neurodermatitis. *Jour. Allergy*, 3:423 (July), 1932.
8. Sulzberger, M. B., and Wise, F.: Eczema from the modern viewpoint. *Med. Jour. and Record*, p. 3 (Jan. 21), 1931.

THE PSEUDO-SYPHILIDES OF INFANCY (NAPKIN ERUPTIONS) CASE REPORTS*

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Napkin eruptions in infancy have long been recognized, and their occasional resemblance to syphilides was pointed out in 1877 by Parrot¹⁵ and later by Jacquet¹¹ in 1886. Since that time, the entity which has become known as the "pseudo-erosive syphilide of Jacquet" has received attention by many different authors. Case reports and descriptions of the various types, as well as articles dealing with the etiology, have been reported by Southworth,¹⁸ Dalous,⁶ Hodora,¹⁰ Hart,⁹ and others.^{7, 12, 14} In the German literature, Lipschultz¹³ was the first to describe a similar process that occurred in adults. Lipschultz and Planner¹⁶ report cases of adult females who presented several slightly indurated papulo-erosive lesions about the vulva. These lesions were for a short time viewed as syphilides because of their characteristic appearance. However, it was later discovered that in both cases there was a cystitis and a pyuria, and as soon as this

was cleared up the eruption on the vulva likewise cleared up. The serology in both cases was negative.

Crawford,⁵ Cooke,⁴ Brenneman,³ and Zahorsky,¹⁹ writing in the American literature, consider ammonia in the diapers as the causative agent in producing napkin eruptions. Fournier⁸ reproduced the lesions in children by producing ammoniacal diapers as an illustration of the etiology. From these experiments and the probable etiological fac-

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tor of ammonia, the condition may be considered as a venenata.

Jacquet recognized four forms of napkin eruptions that are to be differentiated from

worthy of consideration in establishing a differential diagnosis is that the eruption will clear up under hygienic treatment and will remain cleared up, whereas syphilides

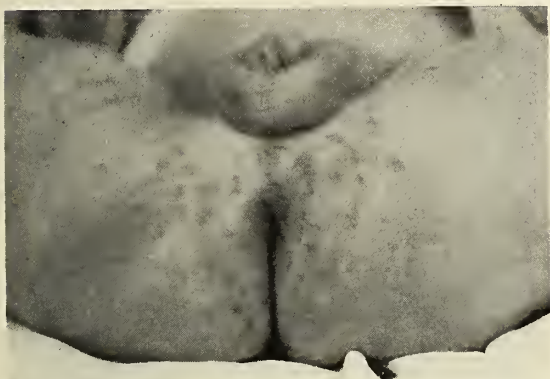


Fig. 1. Napkin eruption presenting discrete papules. Photograph taken two days after patient had been on an antiseptic régime.

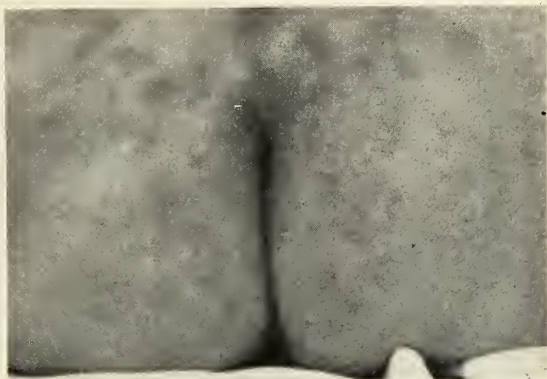


Fig. 2. Enlargement of Figure 1.

syphilides. These four forms are:

1. Erythematous
2. Erythematovesicular or erosive
3. Papulo or post-erosive
4. Ulcerative

The eruption appears first as a simple erythema, and, if hygienic measures are not instituted, the condition will progress through the above named stages. Later vesicles appear upon this erythematous base, but they soon become eroded. If the process is long standing, these eroded areas will become somewhat indurated and definite papulo-erosive lesions are formed. The usual number of papulo-erosive lesions varies from four or five to thirty, although occasionally a larger number have been noted. Sometimes these lesions become confluent and present circinate or serpiginous outlines which result from the coalescence of individual lesions. The papulo-erosive lesions may be closely followed by ulcerative changes. In one of the cases to be reported, the eruption had been present for two months and when seen presented papulo-erosive lesions with no ulcerative changes. Sevestre,¹⁷ in an article that closely followed that of Jacquet, points out that, insofar as the individual lesion is concerned at the papulo-erosive stage, it is identical with that of a papulo-erosive syphilide. However, he also adds that the clinical picture as a whole can be differentiated from syphilis because of its localization to the napkin area. Another point in Sevestre's article that is

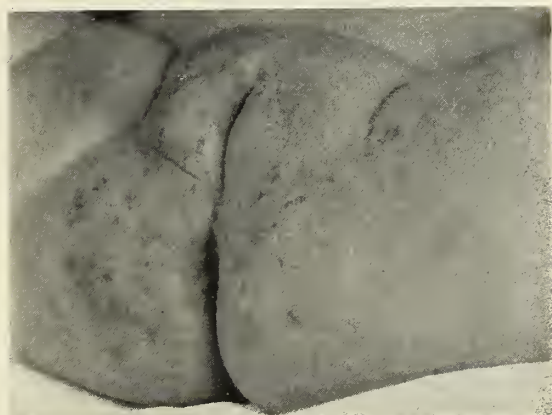


Fig. 3. Eruption presents confluence except for papules on vulva.

do not clear up except under specific therapy. Still another interesting observation by this same author is that a pseudo-syphilitic eruption may also occur in a congenital syphilitic, but this condition will not clear up under specific therapy. The diagnosis is made in this situation on the sharp localization of the eruption to the napkin area in spite of the positive serology and the close resemblance of the individual lesion to a syphilide. A therapeutic test will not clear up the pseudo-syphilitic eruption in this case as was previously pointed out.

Crawford and Cooke mention as other points in the differential diagnosis the absence of palmar, face, and sole lesions; the limitation of the eruption to the convex surfaces; the lack of congenital stigmata;

the spontaneous disappearance of the lesions in napkin eruptions without specific therapy; the lack of characteristic color as is often associated with syphilitic eruptions in infancy; and the negative blood serology.

Adamson^{1, 2} adds vacciniiform ecthyma, seborrheic dermatitis, and impetigo to Jacquet's list to be differentiated from syphilides. He also points out that many cases are misdiagnosed, and calls attention to making careful diagnoses in all cases of eruptions in infancy.

The condition has been seen in the Dermatology Department in the University Hospital, and two cases were placed upon specific therapy several years ago (because of the striking similarity of the condition to a syphilide). Two cases of "pseudo-erosive syphilide of Jacquet" are reported with photographs.

CASE REPORTS

History.—An infant, R. L., aged six months, was brought to the clinic on Jan. 26, 1933, by his aunt. He was entered on pediatrics service, and his aunt gave as the chief complaint "syphilis." She stated that for the past two months the infant has had an eruption which started on the buttocks and has extended to involve the entire napkin area. One month ago his blood Kahn was reported positive.

The patient's mother and father were reported as luetics. The aunt gave the history that the father's mind began to fail in November, 1932. His blood test at that time was reported as 4 plus. Following this it was discovered that the mother's blood Kahn was four plus, and she had been receiving anti-luetic therapy for the past five weeks. There was no history of miscarriages. The patient has one sister living and well. One child died four hours after birth, supposedly as the result of a breech delivery.

Examination: The patient was a well developed and well nourished child of six months. Scalp, eyes, and mucosæ were negative. There was no generalized lymphadenopathy. The lung fields were clear. The heart was negative. The liver and spleen were not palpable. The bones and joints presented no stigmata. The tendon reflexes were normal. The patient presented an eruption covering the entire diaper region. This presented as discrete, glass pinhead to pea sized yellowish-red indurated papules. The lesions were most numerous over the prepuce, around the anus, and on the inner surfaces of the thigh.

Dark field examinations from the lesions on the prepuce were negative, as well as from all of the other lesions examined. The blood Kahn was negative on three occasions.

Course and treatment: The eruption entirely involuted in four days' time. Calamine zinc lotion was applied locally, and the diapers were rinsed in a 1/2000 bichloride solution after being washed.

The second case was referred from the Department of Pediatrics. The baby was brought to the

hospital for examination because of the recent discovery that both parents were tubercular. The physical examination was entirely negative except for the skin eruption. This presented as an eruption in the region of the perineum and over the buttocks, surrounding the genitalia and anus. This was brightly erythematous and presented many pinhead sized papules, some of which were eroded. There were two bean sized papules on the labia majora. These papules were symmetrically placed, fairly firm on palpation and definitely infiltrated. Repeated dark field examinations on these papules were negative. The baby's blood Kahn was negative. The eruption involuted under the same treatment, and in about the same time as did the eruption in the first case presented.

CONCLUSIONS

1. Two cases of "pseudo-erosive syphilide of Jacquet" are reported.

2. The close simulation of the condition with true erosive syphilides is so striking that every case of napkin eruption having erosive lesions warrants careful study, with the idea of establishing a differential diagnosis.

3. The diagnosis is made chiefly on the exclusion of a positive serology and a positive dark field examination.

4. The eruption is not necessarily limited to infants, but may occur in adults.

5. Pseudo-erosive syphilides involute rapidly with simple treatment, and they do not recur under sanitary care.

For the privilege of presenting this material and for many valuable suggestions, I am indebted to my chief, Dr. Udo J. Wile.

BIBLIOGRAPHY

1. Adamson: British Journal of Children's Diseases, 1908, 5-p., 13-24.
2. Adamson: British Journal of Dermatology, 21, 1909, p. 41-48.
3. Brenneman: American Journal of Diseases of Children, 1921, p. 38-47.
4. Cooke: American Journal of Diseases of Children, 1921-22, p. 481-492.
5. Crawford: Pennsylvania Medical Journal, 1922-23, v. 26, p. 165-173.
6. Dalous: Monatshefte Fur Praktische Dermatologie, 40, Jan.-Jun., 1905, p. 633-637.
7. Ferrand: Ann. de Derm. et de Syph., 1908, p. 193.
8. Fournier: Recherche et Diagnostic de l'Heredo-Syphilis, Tardive, p. 157, Paris, 1907, Masson and Cie.
9. Hart: Canadian Med. Jn., 11:10-October, 1921.
10. Hodora: Monatshefte Fue Praktische Dermatologie, 26, Apr., 1898, p. 325-339.
11. Jacquet: Revue des maladies de l'enfance, Paris, 1886, p. 208. "Des erythemes papuleux fessiers posterosifs."
12. Kumer: Arch. F. Dermat. und Syph., 140:105, Apr. 29, 1922.
13. Lipschutz: Arch. F. Dermat., 131, 104, 1921.
14. Marfan: Le Nourrisson, 14-15, 1926-1927, p. 65-78.
15. Parrot: L'athrepsia, Paris, 1877. (Quoted from Jacquet, Sevestre, etc.)
16. Planner: Arch. F. Dermat. und Syph., 167 Band 1 Heft., p. 65-73.
17. Sevestre: Gazette de Medecine et de Chirurgie, 24, 1887, p. 835-837.
18. Southworth: The Ammoniacal Diaper and its Correction. Arch. Ped., 30:730, October, 1913.
19. Zahorsky: American Journal of Diseases of Children, 1915, 10, July-Dec., p. 434-444.

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SEPTEMBER, 1934

EDITORIAL

F. C. WARNSHUIS RESIGNS

Elsewhere in this number of the JOURNAL will be found the resignation of Dr. Frederick C. Warnshuis, Secretary of the Michigan State Medical Society.

Doctor Warnshuis requested that his resignation take effect on September 1, but has kindly agreed to serve in his usual capacity during the three days of the annual meeting at Battle Creek.

The Council has directed that the Chairman of the Council, Dr. B. R. Corbus, take over the office and duties of the Secretary until the January meeting of the Council.

Doctor Warnshuis has been in practice in Michigan for the past thirty-two years. For more than twenty-one years he has served this Society as Secretary, and until the division of the office seven years ago, as Secretary-Editor. He now combines the offices of Secretary of the Society and Business Manager of THE JOURNAL. During his tenure of office we have seen the phenomenal growth of industrial centers in Michigan, with a proportionate influx of doctors and a corresponding increase in the membership of the Michigan State Medical Society. During this period the Society has kept pace with the development of organized medicine and Michigan has been a pioneer among the other states in the development of a post-graduate program especially for the doctors in the rural communities, in bringing to the

laity medical information, and latterly in economic studies.

The burden of all this and many other activities has fallen largely upon the Secretary, and indeed he himself has suggested and instituted many of the activities which,



DR. FREDERICK C. WARNSHUIS, who resigns after twenty-one years as secretary of the Michigan State Medical Society

carried out successfully, have placed Michigan among the leaders of the State Societies of the country.

All of this suggests that Doctor Warnshuis has an infinite capacity for hard work, a vision of what a medical society should be, and the ability to carry through. In addition he is a thoroughly good business man. He is chiefly responsible for the satisfactory financial condition of this society. Only his unusual capacity for rapidly turning out work has made it possible for him to carry on a general surgical practice, to serve for a period as Secretary of the State Board of Registration, to act as collaborating editor of the *American Journal of Surgery*, and assistant editor of the *Bulletin of the American Medical Association*.

His book, "The Principles of Surgical Nursing," published by Saunders in 1918, is used in many of the nursing schools of the country and has been translated into at least two foreign languages.

For fifteen years he has been speaker of the House of Delegates of the American Medical Association, a position which demands not only expert knowledge of parliamentary procedure, but also executive ability of a higher order. The experience gained in this position, his contacts with the outstanding men of the profession, and his intimate knowledge of the many problems which come before the officers of the American Medical Association, have been fully utilized by him in his state work to the advantage of the profession of Michigan.

To the new field of labor as Secretary-Treasurer and Director of Public Relations of the California State Medical Association, Doctor Warnshuis brings a ripe experience and marked ability which cannot but be most advantageous to the profession of that state. They are to be congratulated. We would express our appreciation to Doctor Warnshuis for his long, faithful and efficient service, and assure him and Mrs. Warnshuis that they carry with them the best wishes of the Michigan State Medical Society to their new home in the West.

POST-GRADUATE MEDICAL INSTRUCTION

Within the past decade this has become one of the most important subjects that concerns the medical profession. The demand at the beginning of the decade just closed was not great. Those seeking graduate instruction were for the most part physicians who looked to leaving the ranks of general practice to become specialists. The only sources open to them were proprietary post-graduate medical schools which offered courses more or less limited, particularly limited for the graduate student by the magnitude of the tuition charged. Few, comparatively, went abroad to European centers, where they were at a certain disadvantage through lack of understanding a foreign language or by listening to a professor who wrestled with broken English.

Undergraduate instruction has always received the major emphasis in this country until now our medical schools are among the best in the world. Post-graduate medicine, however, has taken on a new impetus during the past six or seven years. It has become a matter which concerns the general practitioner even more than the specialist. The demand for such instruction on the

part of the profession at large is steadily growing and the time may not be far distant when we will have numerous adequately endowed institutions for the purpose. According to the 1932 report of the commission on medical education in the United States, about 3,500 doctors take resident post-graduate courses in the United States and a thousand go abroad. A little over four per cent of the medical profession of this country consider it an important matter to leave their practice for systematic post-graduate study. This does not mean, however, that the majority may not endeavor to keep abreast of medical progress in other ways. New literature, periodic, in the way of medical magazines, and new books or works periodically revised are in great demand; these, together with attendance on medical meetings, constitute the means of advancement for a large number.

In many instances the demands of medical practice, as well as the economic situation, render it inconvenient for physicians to leave home without great sacrifice. For these, who are in the majority, the extension post-graduate courses have proved of inestimable value. In Michigan the coöperation of the Michigan State Medical Society and the Department of Post-Graduate Medicine at the University of Michigan is too well known to require more than mention to the profession of this state.

At a recent meeting of the Detroit teaching staff with Dr. J. D. Bruce, the director of post-graduate medicine, it was stated the latest classes were about five times as large as those of the earlier years of the movement. Every physician in the state should pursue some graduate instruction every five years; courses in the future will include those specially designed for the general practitioner. The brief intensive course has proved popular. Then there is the specialist, which will necessitate much larger periods at recognized medical centers, and third, the graduate course of three to five years duration to be taken at the University, or in other acceptable teaching centers. To meet these obligations a much enlarged program must be contemplated. Provision must be made for an enrollment of 700 to 800 every year. To distribute the teaching load and also to bring the program within easier reach of the doctor the Advisory Committee on Post-graduate Education has arranged for the opening of three more

teaching centers: Battle Creek-Kalamazoo, jointly; Flint, and Grand Rapids. The announcement of this new program will be found elsewhere in this issue of the JOURNAL and in an early number the Committee hopes to present the entire program for the coming year.



DR. GEORGE L. LEFEVRE, Muskegon
President of the Michigan State Medical Society
1933-1934

THE RIGHT OF PRIVACY

The medical practitioner dwells in the midst of alarms. At least one might conclude, after reading a paper by Dr. I. S. Trostler in the May (1934) number of *Radiology*. Dr. Trostler is personally known to every roentgenologist in Michigan as well as almost every other state. He has written extensively on the medico-legal phases of medicine so that his carefully written essays have a wider appeal than the specialty which receives his major attention.

A great deal has been written on the subject of malpractice. In fact, no opportunity has been neglected by the JOURNAL of the Michigan State Medical Society to emphasize the importance of defenses in the way of prophylaxis rather than permitting such cases to assume the position of legal issues. However, Trostler is on a different quest.

His title (May physicians, medical writers, and publishers give publicity to recognizable photographs of patients without incurring liability?) suggests the answer. He has found, according to law and supreme court decisions, that five states have given the right of privacy a common law standing. These states are Georgia, Kentucky, Missouri, Kansas and Maine. Michigan, New York and Rhode Island have refused to accept the so-called right of privacy as a common law right.

Another phase presents itself and that is the possibility of abuse of so-called "privileged communications." Case history records, clinical photographs and other illustrative materials are in a sense privileged communications. As presented, case histories are anonymous. There is no infringement of privileged communications when clinical data are not identified with a definite person. In the publication of recognizable photographs the so-called *privilege* of the patient should be obtained by a signed statement granting permission for publication; or the recognizable features should be disguised if possible without obscuring the lesion to be illustrated by the photograph. When a patient submits to photography there is an implied understanding at least that the photograph may not be filed away for no eyes to behold. However, an implicit understanding and a signed statement granting permission for publication in a medical or scientific journal will at least promote peace of mind.

All this concerns the occasional writer and the publisher. There is, however, a similar situation in which any physician might be caught off his guard and that is in giving out information to various insurance companies who make inquiries about certain cases in which they are interested. Some insurance companies, aware of their position, send their claim agents already armed with properly signed waivers which the physician may retain in his files. Inquiries by telephone about patients should be accorded the greatest caution. Reports to properly constituted organizations, such as Boards of Health, should be sent in sealed envelopes and not by post-card. Trostler's paper contains this significant paragraph:

"While it may be true that the right of privacy may be somewhat slow in gaining recognition by legislation and enactment by statutes specially recognizing the same, the common law principle

brought out by the original article, 'Judge Made Law,' resulting from the growing number of decisions, is sure to bring the right of privacy to be recognized more and more as time goes on."

THE DOCTOR'S READING

It is a pleasant and harmless pastime to recommend reading matter for others. Harmless because it is up to the gentle reader to accept or to pass up the advice. Often the recommendations consist of novels or stories written by or about members of the medical profession. Again the literature may consist of something that has interested the writer himself, who, in his altruism, wishes others to share his tastes. As a matter of fact most persons who take pleasure in the printed page have well defined likes and dislikes formed at an early period in their intellectual lives.

The novel is for the rapid reader, a class to which very few physicians belong. The years of high school and college and medical school, during which time our reading is of the text-book variety, have got us into the habit of reading slowly and of stressing every sentence. There are very few who would care to spend time reading "Anthony Adverse" as painstakingly as they would a treatise on medicine or surgery. While many read for entertainment, there must also be an element of profit, if one's interest is to be sustained.

There seems no good reason why physicians should confine their reading to medical or near-medical titles. Sydenham, asked to recommend reading matter for a medical student or a young man contemplating medicine as a career, recommended "Don Quixote." The advice is sound. There are a number of the world classics one could delve in with profit. To appropriate rare Ben Jonson's estimate of Shakespeare, they are not of an age but for all time. "Don Quixote," Montaigne's Essays, Erasmus's "In Praise of Folly"; the list might be extended indefinitely.

Much as one might hesitate to do so, the writer would strongly recommend to the thoughtful consideration of the gentle reader, "Technics and Civilization" by Lewis Mumford, a book that has come from the press this year. This work has received almost universally favorable reviews. It deals with a subject of great interest, one that has influenced the present age probably more than any other. Man has been described as

a *tool-using animal*. Mumford shows that the machine age, so-called, is not confined to the nineteenth or twentieth century. He traces the machine through many centuries of its history. His book is a basic work written with completeness and clarity. When looking for holiday reading "Technics and Civilization" is worth one's consideration, as a brilliant contribution to the adjustment of human life to a new era of science and technology.

OLD AGE PENSION FOR PHYSICIANS

Within the past month the editor has received two letters enclosing magazine clippings on the subject of old age pensions for physicians. One correspondent referring to the subject writes, "I think it would be very practical, providing for our retired M.D.s (after the age of sixty-five years) as well as making room for our incoming young ones." Enclosed is a clipping referring to the retirement of railroad men after thirty-five years service, or at sixty-five years of age, on sixty per cent pay based on the past ten years' earnings. The bill, it is estimated, would take out of service 300,000 of the older men, leaving room for an equal number of younger men. Then follow these two paragraphs:

Now why can't we sawbones start the same thing, and all physicians, dentists, etc., who have had forty years of service or reached the age of sixty-five be compelled to retire from practice on a pension of say \$100 a month so long as we abstain from practice, and our wives after our death receive fifty per cent of this pension under similar conditions? A rough guess by me would be the retirement of around 20,000 physicians alone to start and about 5,000 per year thereafter. Say we have 150,000 physicians alone and each paid \$1.00 monthly into such a fund, that would amount to \$1,800,000 annually.

An agreement to be made ironclad, would require each physician to retire after forty years' practice or reaching the age of sixty-five, otherwise he would not receive his pension. That would give the young physician a better chance and the old ones a living during their declining years, along with a much-needed rest. This, in my opinion, would be much better than establishing a home for aged physicians which would take them away from their friends and family, while the pension arrangement would not restrict them to anyone place.

Five or ten years ago there was little or no thought of old age pensions. The depression has wrought changes in the mental attitude of multitudes of people. Many have had their savings of a lifetime swept

away and have been left stranded high and dry at an age when it is difficult, if not impossible, to begin all over again. One of the correspondents concludes his letter, "I will be pleased to hear from you regarding the matter in our next *State Journal*." We believe the matter of old age pensions for physicians would be better dealt with for the present at least by written opinions from our readers in the way of short pointed letters, than if we were to commit the *JOURNAL* either for or against the retirement pension idea.

THE HISTORY OF URANALYSIS*

The history of uranalysis has been related closely to the development of chemistry. During the period when chemistry was alchemy, and when all science was more or less occult and mysterious, the application of scientific methods to the examination of urine was unknown. From the beginning of the Renaissance, however, alchemy was gradually modified and, in its place, arose chemistry. One of the applications of chemical methods to medicine was the identification of unknown constituents of the urine and the discovery of methods of urinalysis.

In urology, as in so many other fields of medicine, the first recorded references are to be found in Hippocrates and Galen. With them, urinary examination, although frequently practiced, was not developed scientifically. The method was considered of greater prognostic than diagnostic value. The work of Galen was revised and disseminated by such men as Antyllus, Oribasius, Vindicianus, Alexander of Tralles and Paul of Ægina, none of whom made original contributions to the subject. The work of Theophilus (7th century), containing descriptions of the urine, was the point of departure for all uroscopy of the Middle Ages, and his book became the authority for both Arabians and Salernitans. The Arabians as well as other physicians of the Middle Ages tended to carry uroscopy to extremes, pretending to predict pregnancy and even the sex of the child from observation of the urine. Savants and charlatans alike placed great faith in the efficacy of uroscopy, although even as early as 304, Erasistratus had condemned

the practice and Bonacursius reported that he and his pupils mocked the inspectors of urine.

Throughout the Middle Ages, there seems to have been a conflict of opinion regarding the practice of uroscopy and the extent of its reliability. At one extreme were the uromancers, mere quacks imposing upon the credulity of the people; at the other extreme was the group who, aroused by the excesses of the uromancers, vehemently denounced uroscopy in any and all forms. A middle group believed that uroscopy should be used only in conjunction with other diagnostic methods. Among these was Actuarius (13th century), who was considered the last representative of Greek medicine and whose work when translated into Latin in the fifteenth century became a standard authority throughout the sixteenth and seventeenth centuries in Europe.

Despite the variance in opinion regarding uroscopy, the urinal became closely associated with the art of medicine. An amazing number of pictures dealing with medical subjects are devoted to an examination of the urine. They appear in manuscripts of the fifteenth century, in wood cuts of the sixteenth century and become noticeably more frequent in the painting of the seventeenth and eighteenth centuries. So closely connected with medicine was the urine glass in the Middle Ages that St. Damien, a patron saint of medicine living in the second century, was frequently figured with the urinal as a symbol. With the increasing disposition to discredit uroscopy during the seventeenth and eighteenth centuries, the subject became a fit one for satire. A typical example may be noted in an English engraving of 1772. A frightened girl is shown in earnest consultation with a richly-dressed uromancer, who is surrounded by all the accoutrements of his trade—urine glass, skull, mortar and pestle, books and globe. Under the cut are these words:

"'I'm vastly sick,' Miss Biddy cries,
'Yes sick indeed,' the Sage replies,
'You've made a slip, my dearest Daughter,
I see the Bantling in your water.'"

The abuses of uroscopy were slow in disappearing, but one of the principal factors leading to their final elimination was the work of Paracelsus and his followers in the sixteenth century.

The ordinary uroscopist observed the

*Eleventh historical editorial on methods and devices that have aided in the evolution of medical science.

color, consistency, transparency, smell and inclusions of the urine. He divided the urine as it appeared in the urine glass into three or four layers and noted the bubbles, suspended particles and sediment. According to empirical rules concerning the character of the urine, he made his diagnosis. Paracelsus's contribution consisted in subjecting urine to alchemical processes. He was particularly concerned with the weight and volume of the constituents of the urine. By distillation, he believed that he could split urine into its components, sulphur, mercury and salt. The distilling flask and the body were divided into equivalent sections and the position of the condensed steam on the distilling tube indicated that a corresponding region of the body was affected by disease. Absurd though the method was, it involved the technical manipulation of urine instead of simple observation. Though his pupil, Thurneissen, carried the new type of uromancy to still further extremes, other physicians became concerned about the physical properties of urine. Van Helmont and Sylvius were interested in determining the density and acidity of urine. Rhenanus and Fludd noted the taste of urine and the latter was aware that it was sometimes sweet. Jodocus Willichius observed that urine sometimes became cloudy on heating. Thomas Willis (d. 1675) likewise knew that heat sometimes precipitated "earthy" substances in the urine, which he believed consisted of water, salt, sulphur and earthy substances. In studying the urine of diabetes, he noticed the honey-like taste of the urine and concluded that it was a consequence of defective kidneys.

From the time of Willis, a number of physical characteristics of urine were discovered. Pierre Borel found that blood serum coagulated like egg albumen and that urine did not. Bellini evaporated the urine and noted the character and density of the residue. He believed that the substances of the urine were first found in the blood. Dekkers (1694) found that in urine which showed precipitation following heating, the addition of acid allowed the precipitate to dissolve. On the other hand, if albumin were present, the precipitate remained. Analysis of urine was further advanced with the introduction of the litmus paper reaction by Duclos in 1680 and with the use of the hydrometer by Methe in 1727. The latter instrument was

a hollow bulb partly filled with iron filings and having an empirically graduated neck. In principle, it was similar to the modern urometer.

During the eighteenth century, much was learned of the chemistry of normal urine. Brandet discovered phosphorus in the urine. Margraff (1757) showed that phosphorus occurred as phosphate of lime and later demonstrated its origin from soluble phosphates. Urea was discovered by Rouelle de Cadet in 1773 and, twenty-five years later, Cruikshank observed its crystallized state. Priestley discovered lithic (uric) acid in 1788.

Urinary stones were found by Scheele to consist of uric acid. In 1797, Wollaston found, in urinary calculi, oxalate of lime and triple phosphates. Later, he found cystic oxide (cystine), the first discovered amino acid, in stones. Ammonium ureate was also discovered in calculi about the same time.

As the end product of body reactions, urine came to be considered as an index of the normality of body processes. If a deficiency or excess of the normal components or the presence of abnormal constituents were found in the urine, an explanation was required; disease might be indicated. Cotugno rediscovered the heat and nitric acid test for albumin in the urine, and Cruikshank, in 1797, recognized that urine which coagulated on heating or after the addition of corrosive sublimate or nitric acid could be obtained from patients with dropsy. From this time until Richard Bright, in 1827, proved that albumin in the urine was indicative of dropsy or renal disease, many studies on albuminuria were made.

In the latter part of the eighteenth century, the chemistry of sugar had been investigated and it was recognized that fermentation liberated carbon dioxide gas and that alcohol and carbon dioxide were the characteristic end products of such fermentation. About this time, Poole and Dobson evaporated diabetic urine and found a fermentable viscous residue. It was shown after some study, particularly by Chevreul, that the sugar of diabetic urine could be crystallized and that it was identical with grape sugar.

Throughout the nineteenth century, the chemistry of urine was pursued further and a number of tests for foreign substances were devised. The relationship between

blood and urine was studied and frequently simultaneous tests of the two substances were made. Blood chemistry and the analysis of urine advanced together. Berzelius and later A. E. Becquerel published quantitative chemical analyses of whole urine which showed that the essential chemistry was understood. The chemical basis for acidity in urine was discovered in the phosphate compounds. For the detection of chlorides in urine, Redtenbacher introduced the silver nitrate test. The ammoniacal fermentation of urine was observed as early as 1843. Kjeldahl, in 1883, found analytical methods of determining the nitrogen content of urine and blood. This method has provided the basis of hundreds of biochemical studies on protein metabolism. Accurate quantitative tests for uric acid (Hopkins) and oxalic acid (Salkowski) were devised later in the century.

Among the tests which were developed for foreign substances in the urine was the copper sulphate reaction for glucose by Trommer which was later modified as the Fehling test, and, still later, as the Benedict test. In 1824, the Gmelin-Teichmann test for bile pigments was devised. Marabellis, nearly forty years before, had been able to detect bile in urine by adding nitric acid. Trossier (1863) introduced the magnesium-perhydrate test for bile. A urobilin test was devised by Jaffé (1869). In 1853, Teichmann introduced his test for the blood pigment hematin and indicated that it was applicable to the urine. Another blood test was devised by Heller. Bence-Jones and Heller, in the middle of the century, discovered a peculiar protein in the urine of patients with osteomalacia and devised tests for its detection. Peters (1857) noticed the characteristic apple-smell of acetone urine, and Lieben (1870) devised the iodoform test for detecting acetone bodies. Gerhard introduced a ferric chloride test for the same purpose. Boedekker (1859) introduced tests for alkaptonuria. Hippuric acid, indican, purine compounds, allantoin and hematoporphyrin were also recognized during the nineteenth century. One of the first quantitative tests for abnormal substances was that of Esbach (1874) for estimating albumin.

As early as 1656, Pierre Borel had subjected urine to microscopic examination and urine was often studied microscopically during the eighteenth and nineteenth centuries.

Particular attention was directed to the nature of the crystalline substances of the urine. In addition, during the nineteenth century, organized materials were found—blood and pus cells, epithelial cells, parasites and casts. The latter were probably first seen by Vigla and Rayer, and were studied intensively by Henle, in 1844, and, later, by Rovida and by Peyer. Cylindroids were discovered in 1870 by Thomas. In the earlier examinations, the sediment settled on standing; in 1890, however, the hand centrifuge (introduced by Sternbeck) was used to throw sediment to the bottom of the specimen tube where it could be collected. About five years later, Purdy devised an electric centrifuge with tubes marked to indicate the percentage of sediment.

During the past few decades, biochemists have studied the chemistry of urine in relation to studies on nutrition and metabolism. New tests have been devised and quantitative studies on urinary components have been made. Folin, in 1905, made analyses of "normal urine" from thirty subjects who were fed a standard diet. He emphasized that quantitative tests were of little value unless the food and fluid intake were as accurately known as the substances of the urine itself.

The modern era of analysis had its inception with this concept and with the discovery of colorimetric and microchemical methods. If a chemical reaction on a small amount of urine could produce a color, the extent of the reaction could be detected by comparing the color with that of a known standard. To assist in the comparison of colored solutions, the colorimeter was devised. Since about 1918, this instrument (in any of a half dozen models) has become universally used in clinical laboratories. Folin, in 1904, devised a microchemical colorimetric test for creatinin and, during the next two decades, other quantitative microchemical methods of analysis were devised by Folin, Benedict, Van Slyke and their students. These have had a tremendous influence upon both the metabolism studies of biochemists and the tests of the clinical laboratory. A relatively recent (1928) adaptation of the urine is the Ascheim-Zondek test. When urine which contains anterior pituitary hormones (a condition associated with pregnancy) is injected into the blood of a female laboratory animal, the hormone induces ovulation in the test

animal. This reaction has become important in the diagnosis of pregnancy.

The advances of the last half century in the analysis of urine have resulted in determinations of great accuracy. Tests have been examined carefully and those which were not specific have been eliminated. Many of the chemical procedures though accurate take a great deal of time and often require large quantities of urine. The development of newer and quicker methods requiring small quantities of material is desirable. In industrial chemical analyses, the use of the spectroscope has recently made possible accurate quantitative determinations from minute amounts of material. The adaptation of such methods to the analysis of urine may become a line of further advance.

W. T. D.

OPPOSED TO THE INTERESTS OF THE DOCTOR

(*New York Medical Week*)

Today the age old and venerable profession is confronted by myriads of problems and changes in economics. Many physicians are now faced with a new trend in economic pressure that has been brought about by the telephone, automobile, radio and the industrial age with complicated machinery. The world-wide depression has so wounded the standard of living of the doctor that it will take many years to heal.

Some of the existing conditions which have undermined the doctor's income at present are as follows: Private business corporations use as their keyword to the doctor, when solicited, that their products are only advertised to the practicing physician. After the commercial products have been popularized through the medical man's prescriptions, the promises of these money making corporations are forgotten. Subsequently, these companies begin advertising campaigns over the radios and, by a series of advertisements in all sorts of periodicals, never forget to mention that the medical profession encourages its use. The city physician has developed a poor habit of writing patent medicines because it helps him to save time by not having to calculate the dosage of all the ingredients. Patients, however, rapidly lose confidence in such practices and soon they learn to ask for such medications over the counter of the drug store. Then we have the unscrupulous advertisers over the radios, through which channels much incorrect information is given to the public by quacks who either run their own clinics or are highly paid by commercial enterprises.

The physician, as a rule, volunteers without charge to treat deserving poor patients in dispensaries, but the hospitals, however, do not have adequate social service assistance to investigate those who do not deserve charity. Nevertheless, there is unfairness on the part of a good number of hospitals in not protecting the physician's economic status.

At times the medical profession is exploited by several small private incompetent health insurance companies which work on a basis of profit. The companies of varied sources offer doctors very small annual fees and in return large numbers of families are attended by the overworked and un-

derpaid poor physician who usually does very inferior type of work because of the tremendous amount of petty responsibilities. Also, there are numerous societies, lodges and endless benevolent and fraternal organizations which work on the very same principles and the helpless doctors fall for such insignificant tactics. There are numerous other causes which limited space does not permit the writer to mention at this time.

There are various groups and cults taking advantage of the doctors' lack of interest in the welfare of the medical profession, and so these strings of cults are constantly exploiting humans in their misery for their financial gain. The medical societies are weak without the individual physician's interest and understanding, as there must be concerted effort on the part of the medical profession to help solve these problems rather than allow those who are out of the profession to dictate what ought to be done.

Dispensaries should be put out of business if they are of a commercial nature; which can be done by having a state law passed prohibiting commercial dispensaries from making a charge to use clinics or medicines. A specialist or general practitioner should never use patent medicines for prescribing. There are too many age old, useful drugs in the materia medica and pharmacology textbooks; students now at medical schools should be admonished against the evil practice of patent drugs. The druggists and the physicians should have mutual understandings and never infringe upon each others' fields. Cheap contract lodge practice, either on a small or large scale, is a pernicious, destructive economic force and should not be tolerated by medical societies. In short, the art of medicine has been constructed on basic principles of truth for which men in the past century have fought valiantly. We, too, must try and uphold those very fine principles and ethics which help to make our profession stand out characteristically from all the rest.

M. MARYN KAFKA, M.D.

A SENSIBLE PRAYER

The following poem was written by one T. H. B. Webb, a British soldier killed in action in the Great War. The Great War was the occasion of a number of poems of merit; everyone will recall "In Flanders' Fields," by McCrae, a Canadian physician.

Give me a good digestion, Lord,
And also something to digest;
But when or how that something comes
I leave to Thee, Who knowest best.

Give me a healthy body, Lord:
Give me the sense to keep it so;
Also a heart that is not bored
Whatever work I have to do.

Give me a healthy mind, good Lord,
That finds the good that dodges sight,
And, seeing sin, is not appalled,
But seeks a way to put it right.

Give be a point of view, good Lord,
Let me know what it is, and why;
Don't let me worry overmuch
About the thing that's known as "I"

Give me a sense of humour, Lord,
Give me the power to see a joke;
To get some happiness from life,
And pass it on to other folk.

MICHIGAN'S DEPARTMENT
OF HEALTH

C. C. SLEMONS, M.D., Dr.P.H., Commissioner
LANSING, MICHIGAN

TYPHOID IN A CIRCUS

Ringling Brothers and Barnum and Bailey Circus showed in Michigan for six days as follows: Detroit, July 22, 23 and 24; Flint, July 25; Lansing, July 26, and Kalamazoo, July 27.

On Monday, July 23, the Michigan Department of Health was notified by telephone by the Detroit City Health Department that there appeared to be a number of cases of typhoid fever among the employees of the Circus. Representatives of the State Department first visited the Circus on July 24. The Detroit Health Department had already picked out 70 cases with some elevation of temperature or other symptoms. These were all hospitalized in Detroit. Representatives of the State Department of Health including epidemiologists and engineers remained with the Circus during the rest of their schedule in Michigan.

Temperatures were taken of the entire personnel at Flint, Lansing and Kalamazoo. At Flint seven additional cases with some symptoms were picked out and returned to Detroit for hospitalization. At Lansing six other cases were picked out and hospitalized in that city. At Kalamazoo three other cases were listed as suspects and returned to Lansing for hospitalization. Thus, there were eighty-six cases hospitalized in the state, seventy-seven of which were in one hospital in Detroit and the other nine in a Lansing hospital.

At the time of taking temperatures all were carefully scrutinized who had an elevation of as much as 100°, and those in the "cook house" with temperatures of even 99° were considered. All of those found by nurses to have elevations as above were carefully gone over on the grounds by three physicians and thus the groups hospitalized were selected. Of the seventy-seven hospitalized in Detroit, the report as of July 30 indicates that forty-four were diagnosed as cases, typhoid was eliminated as a possibility in eleven, and twenty-two are still listed as suspicious, most of whom it was considered would be negative. Of the nine in Lansing, the report on the same day was six positive and three probably negative.

The U. S. Public Health Service was notified as soon as it was realized that there was an interstate problem of some magnitude. An engineer and an epidemiologist were sent and took charge of the interstate questions involved.

There is no evidence as yet upon which any conclusions can be drawn as to the source of the outbreak. Suffice it to say that the infection occurred long before the organization reached the Michigan border. This source may be a carrier yet within the organization and laboratory work is already begun in an effort to determine this. On the other hand, it may be water or possibly some food purchased by the organization in their travels.

C. D. B.

HILLSDALE COUNTY TO HAVE HEALTH
DEPARTMENT

Hillsdale County is to have a health department, according to action taken by the board of supervisors. The W. K. Kellogg Foundation will sponsor the unit, the state will give the usual assistance, and office quarters will be furnished by the county.

Dr. E. G. McGavran will be director of the de-

partment, with headquarters at Hillsdale. Dr. McGavran has had experience in public health work and spent last year at the Harvard School of Public Health. Leonard Board, sanitary inspector for the Barry County Health Department, will be transferred to the Hillsdale unit when it begins functioning on September 1. Four public health nurses will complete the initial staff.

Dr. W. L. Chiang of Nanking, a Fellow of the Rockefeller Foundation, spent the first two weeks of July with the Michigan Department of Health, and also visited several county and district health departments. Dr. Chiang has been a student at the Johns Hopkins School of Hygiene. Upon his return to China he will resume his work with the Central Field Station at Nanking.

Dr. Theodore R. Meyer, Director of the Van Buren County Health Department, supported largely by the W. K. Kellogg Foundation, visited the Michigan Department of Health during the latter part of June to become better acquainted with the organization and its personnel. Dr. E. G. McGavran, who will on September 1 become Director of the Hillsdale County Health Department, also sponsored by the Kellogg Foundation, visited the Department during the last two weeks of July. These men spent several days in the field observing county health departments in operation in Michigan.

CORRESPONDENCE

AGRANULOCYTOSIS

Grand Rapids, Mich.,
July 26, 1934.

In view of the recent reports published in the *Journal of the American Medical Association*, and the exhibit at the national convention showing the relation of certain drugs to the etiology of agranulocytosis, I believe I should report a case of mine.

So far, no case has been reported in which aspirin (acetyl salicylic acid), was the suspected cause. (The Library of the American Medical Association has confirmed this in a direct communication to me.) Most investigators have indicted the barbituric acid derivatives, and some authors have said that the newer highly advertised products have been to blame, particularly affecting doctors and nurses, who have been supplied with samples of these products.

The article on the subject by Benjamin and Biederman (J. A. M. A., July 21, 1934), reports a case of a young woman who had repeated attacks of granulocytopenia, one induced by 10 grains of amidopyrine, but failure of 10 grains of acetyl salicylic acid to cause any drop in white count.

My case was as follows (August, 1931): A woman, A. W., aged fifty-eight, who had been suffering for years with chronic arthritis of the atrophic type, was taken acutely ill with a furuncle on the arm. Her temperature was 101 and she complained of generalized aching. The furuncle was lanced but no pus was found. Wet dressings were applied with no relief from the intensive pain in the arm. There was a subsequent lymphangitis in the arm and axilla, and a pharyngitis developed which simulated diphtheria so closely that anti-toxin was given, although a culture was negative. Four days after the onset of the illness, because of the patient's continued downward trend, a white count was taken which showed a total cell count of 600 with complete absence of granulocytes. The patient expired suddenly the same day that the count was made. Medication consisted of morphine and

aspirin. The history now obtained is that the patient had been taking 100 aspirin tablets a week for two years to control the pain of her arthritis. This amounted to 70 grains (acetyl salicylic acid 4.5 grams) daily. He took no medication other than the acetyl salicylic acid. This history was obtained from the daughter who bought all the medicine taken by the patient. She stated that she never bought anything but aspirin, as their finances were limited. She watched for sale prices on large quantities. I have every reason to regard her story as reliable.

Perhaps acetyl salicylic acid is less potent in bringing about this phenomenon than some of the other sedative radicles, but this case would indicate the possibility of such effect.

Sincerely yours,

PAUL W. KNISKERN, M.D.

Editor, Journal M. S. M. S.: Dr. J. H. Kellogg has just called my attention to the reference, in the article on the Calhoun County Medical Society of the August Journal, to a famous old trial of him for advertising in 1886. He says this was a persecution, charges being brought by a doctor whom he had helped through Medical School, and had employed for some time, but had to discharge for gross unprofessional conduct. These charges were repeated at the State Society and were brought before the Judicial Council, where they were unconditionally withdrawn. Dr. Kellogg says you will find these records about a year or two following the County Society trial which occurred in 1886. Dr. Kellogg feels that this explanation is due him, because the action of the County Society did not finally clear the charge, but the State Society did. Dr. Kellogg was elected President of Calhoun County Medical Society in 1887.

WILFRED HAUGHEY, *Secretary*

Calhoun County Medical Society.

Battle Creek, August 21, 1934.

SKELETAL TRACTION IN TREATMENT OF FRACTURES OF SHAFT OF TIBIA AND FIBULA

In fractures of the shaft of the tibia and the fibula, W. K. West, Oklahoma City, has used the Kirschner wire technic in the following manner: 1. In cases in which weight traction is used in conjunction with the Braun frame, as described by Boehler, the Kirschner wire is introduced through the middle of the os calcis; for example, cases coming in several days after injury; also spiral or badly comminuted fractures. 2. In cases in which the wire is introduced through the os calcis and reduction carried out immediately, followed by the use of the long leg plaster bandage with the knee flexed. The wire and bow are incorporated in the cast. These cases are usually those in which the fractures are low in the tibia and fibula. A spinal or general anesthetic is used when a manual reduction is done at the time the wire is introduced. 3. In cases in which the fracture is in the middle or upper third. Two wires are placed, one just below the knee and the other just above the ankle. A cast is applied to the fracture site above and below; then, with traction applied, the two casts are united by connecting plaster.—*Journal A. M. A.*

OBITUARY

Dr. Roy A. Windham

Doctor Windham passed away in his home at Port Huron on Tuesday, July 17, 1934. Death came after a short illness and was due to coronary thrombosis. Surviving him are his wife, Mrs. Ada E. Windham; a son, Elwood Windham, of Detroit, a daughter, Miss Margaret Windham of Port Huron; two brothers, P. S. Windham, M.D., of Saginaw, and Mr. Alfred Windham, of Dayton, Ohio, and a sister, Miss Katherine Windham of Detroit.

Doctor Windham was born at Belle Center, Ohio, October 1, 1879, and was educated in the public schools and Ohio Wesleyan College. He served in the Spanish-American War on the Island of Porto Rico, where he remained in a hospital for some time after the close of the war as a patient. Doctor Windham graduated from the Detroit College of Medicine in 1912 and served as an interne at St. Mary's Hospital, Detroit, for a year after graduation. He entered into general practice at Port Huron in 1913 where he remained so engaged until his death.

Doctor Windham was a member of Saint Clair County, Michigan State and American Medical Associations. In 1930 he served as president of Saint Clair County Medical Society. He was a member of the staff of Port Huron Hospital.

Dr. F. L. Newman

Dr. Frank Lydston Newman of Detroit died August 23, 1934, in his home at 575 Seyburn Avenue. He was born in Norfolk, England, in 1859, the son of Dr. William John Newman. He began his medical education on the Isle of Jersey, graduating from Victoria College of St. Helier. He studied at Dieppe, France, for a while and then came to America in 1880, spending the next five years at Toronto. He then moved to Detroit and completed his training at the Detroit College of Medicine, graduating in 1886. He was a member of the Detroit Club, the Detroit Athletic Club, the Country Club of Detroit, the Detroit Boat Club, the Yondotega Club, and the Boylston Club. He was also a member of the Wayne County and Michigan State Medical Societies and the American Medical Association. Dr. Newman was a widower. In 1889 he married Miss Amy Seymour Gallon, of Lindsay, Ontario. They were the parents of two daughters, Dorothy, widow of Hal D. Caddy, who died in 1930, and Nesta, widow of Paul Weadock, Detroit attorney. Mrs. Caddy lives in Winter Park, Florida.

GENERAL NEWS AND ANNOUNCEMENTS

The minutes of the Battle Creek annual meeting will be published in the November issue.

President G. L. LeFever attended the Upper Peninsula Medical Meeting in Ironwood August 15 and 16.

The Annual Conference of State Secretaries and Editors will be held at the Palmer House, Chicago, September 21 and 22.

All correspondence related to the activities and business of the Society should be addressed, after September 1, 1934, to Dr. B. R. Corbus, Acting Secretary, 313 Metz Bldg., Grand Rapids, Mich.

The Ingham County Medical Society gave a farewell dinner to Dr. F. C. Warnshuis, on August 14 in Lansing. Short addresses were made by Drs. L. G. Christian, R. L. Finch, J. Earle McIntyre, J. O'Mera and J. B. Bradley. Before responding Dr. Warnshuis was presented with a handsome leather traveling bag and he was also made an honorary member of the Society.

Preparations for the celebration of the Eight Hundredth Anniversary of the birth of Maimonides have already been launched. The event will also celebrate the Silver Jubilee of the Maimonides Medical Society. All who wish to participate will address communications to the chairman of the committee in charge of the celebration. The members of the committee are as follows: Noah E. Aronstam, M.D., chairman; Charles Lakoff, M.D.; Herbert I. Kallet, M.D.; Harry M. Kirschbaum, M.D., president of the Maimonides Medical Society. Dr. Aronstam's address is 622 Maccabees Building, Detroit, Michigan.

INVITATION TO WISCONSIN

Meeting at Green Bay on Wednesday, Thursday and Friday, September 12 to 14, the State Medical Society of Wisconsin extends a very cordial invitation to members in adjoining states vacationing in Wisconsin to be guests at its 93rd Anniversary Meeting. All sessions will be held in the Columbus Community Club, Green Bay. Morning sessions will be devoted to section meetings and clinical presentations with general sessions each afternoon. The President's Address will be given at a smoker Wednesday evening, September 12th, while Drs. Olin West, Secretary of the American Medical Association, and Dean Lewis, Baltimore, will address the annual dinner on Thursday evening.

THE DOCTOR'S LIBRARY

Acknowledgment of all books received will be made in this column and this will be deemed by us a full compensation to those sending them. A selection will be made for review, as expedient.

THE DANGEROUS AGE IN MEN. A treatise on the prostate gland. By Chester Tilton Stone, M.D. 100 pages. New York: The MacMillan Company, 1934.

The author describes the prostate gland and its functions, the changes which it undergoes with age, in a language which the intelligent layman can readily understand. It is an interesting discussion of hygiene as it pertains to middle age and later years of men.

A TEXTBOOK OF GYNECOLOGY. By Arthur Hale Curtis, M.D., Professor and Head of the Department of Obstetrics and Gynecology, Northwestern University Medical School; Chief of Staff and Chief of the Gynecological Service, Passavant Memorial Hospital, Chicago. Second Edition, reset. 493 pages with 300 original illustrations, chiefly by Tom Jones. Philadelphia and London: W. B. Saunders Company, 1934. Cloth, \$6.00 net.

The specialty of Gynecology has been presented in concise form based on the author's large clinical experience. He has taken occasion in this edition to go more into detail in certain subjects at the request of some teachers of the subject. The text records the recent advances in Gynecology. The work is well adapted to the requirements of both general practitioner and student.

A PRIMER FOR DIABETIC PATIENTS. A Brief Outline of the Treatment of Diabetes with Diet and Insulin, Including Directions and Charts for the Use of Physicians in Planning Diet Prescriptions; By Russell M. Wilder, M.D., Professor and Chief of the Department of Medicine of The Mayo Foundation, University of Minnesota; Head of Section on General Metabolism, Division of Medicine, The Mayo Clinic. Fifth Edition, Reset. 172 pages. Philadelphia and London: W. B. Saunders Company, 1934. Cloth \$1.75 net.

Perhaps there is no disease in the treatment of which coöperation on the part of the patient is more important than diabetes. A high degree of intelligence on the part of the patient or those responsible for his care is necessary if the best results are to be assured. This little book is an effort to supply the necessary information for coöperation with the doctor.

A COMPEND OF DISEASES OF THE SKIN. By Jay Frank Schamberg, A.B., M.D., Professor of Dermatology and Syphilology, Graduate School of Medicine, University of Pennsylvania, and Carroll S. Wright, B.S., M.D., Professor of Dermatology and Syphilology, Temple University School of Medicine. Ninth edition revised and enlarged with 129 illustrations. Philadelphia: P. Blakiston's Son and Company, Inc., 1934.

The compend has its place. While it cannot supplant the text-book it is convenient as a summary or condensed review of a medical subject. The ninth revision, besides bringing the subject matter up to date, contains material on lymphogranulomatosis and

granuloma inguinale, one a comparatively new disease and the other a pathological condition seen more frequently by the general practitioner than formerly.

MANUAL OF THE DISEASES OF THE EYE FOR STUDENTS AND GENERAL PRACTITIONERS. Charles H. May, M.D., Director and Attending Surgeon Eye Service, Bellevue Hospital, New York. Fourteenth edition revised with 376 original illustrations including 25 plates with 78 colored figures. Price \$4.00, Baltimore, William Wood and Company, 1934.

What can be said in further commendation of a book that has attained its fourteenth edition? It has also undergone a number of editions in Spanish, French, Italian, Dutch, German, Japanese and Chinese. We have had the pleasure of reviewing former revisions and feel that this is an ideal textbook for the purpose for which it is intended. The volume has been brought up to date without materially increasing its size.

POSTURES AND PRACTICES DURING LABOR AMONG PRIMITIVE PEOPLES, ADAPTATIONS TO MODERN OBSTETRICS, WITH CHAPTERS ON TABOOS AND SUPERSTITIONS AND POSTPARTUM GYMNASTICS. By Julius Jarcho, M.D., F.A.C.S., 175 pp., 130 illust., Paul B. Hoeber, Inc., New York, 1934. \$3.50.

This book is an anthropological study of labor. The author attempts from a study of childbirth in primitive people and the lower primates to determine the instinctive behavior of women during labor. He has also brought together a mass of information on the folklore, taboos and customs of particular groups of primitive races. Curio collectors will find the bizarre illustrations of parturient women a feature of interest. The obstetrician as well as other physicians should be interested in the comparison of modern and primitive practices during labor.

A TEXT-BOOK OF HISTOLOGY. By Alexander A. Maximow, Late Professor of Anatomy, University of Chicago; and William Bloom, Associate Professor of Anatomy, University of Chicago. Completely revised with 662 pages with 530 illustrations, some in colors. Philadelphia and London, W. B. Saunders Co., 1934. Cloth, \$7.00.

The Maximow-Bloom histology text which appeared in 1930 was a notable addition to microscopic anatomy. Its exceptional illustrations, its emphasis on cell function and its concern with cytology made it distinctive. In size, however, the book proved to be too extensive for many medical school curricula, though it was commonly used as a reference. The present extensive revision has resulted in a more compact and better adapted classroom text. The text has been reduced from 833 to 662 pages and the illustrations from 604 to 530; about fifty of the illustrations are new. A selected bibliography is

appended to each chapter. The superior illustrations, a histophysiological approach and a mature viewpoint are the outstanding features of the work.

THE RADIOLOGY OF BONES AND JOINTS. By James F. Brailsford, M.D., M.R.C.S., Radiological Demonstrator in Living Anatomy, The University of Birmingham, England, etc., with 310 illustrations. Baltimore: William Wood and Company, 1934. Price \$9.00.

The specialty of roentgenology has become developed to such an extent as to require a library rather than a single volume to record its achievement. The present work deals with only one phase, but an important one, namely, bones and joints with the departures from the normal. As the author writes in his preface "apart from setting forth concisely an account of the bone changes seen in health and disease, it is one of the chief purposes of this book to indicate the significance of radiographical findings and further to present briefly the recent advances already recognized by x-ray departments and radiographic journals, but not yet adequately appreciated by general textbooks." Probably in no other department of medicine do good illustrations mean so much as in roentgenography. The illustrations consist, as we would expect, of reproductions of radiographs and also of line drawings from radiographs. The text is clear and the descriptions are free from verbosity. Every roentgenologist will want to add this book to his library.

ACUTE INTESTINAL OBSTRUCTION. Monroe A. McIver, M.D., Surgeon-in-Chief, Navy Imogene Bassett Hospital, Cooperstown, N. Y. 62 illustrations. Published by Paul B. Hoeber, Inc., New York, N. Y.

The subject matter for this book is a compilation of a series of articles which have appeared in *The American Journal of Surgery* with new material and references incorporated which brings the work up to date. Acute intestinal obstruction is a serious disease. The mortality is high, and has not been materially lowered during the past thirty years. It is associated with almost every phase of abdominal surgery. Moreover, with the growing number of laparotomies, the disease is of increasing importance as a post-operative complication, not only during convalescence but also as a late result of operative procedures. Such a situation obviously demands thoughtful consideration, and is a challenge to the profession. There are three major divisions: Part 1, which gives a general picture of the disease; Part 2, which deals with points in diagnosis and methods of treatment; and Part 3, which discusses the experimental work that has been carried out to determine the cause of death from intestinal obstruction. In Chapter 16, the author gives some unusual interpretations of the use of morphine in the obstructive cases. The whole volume is written in an interesting manner, paying considerable attention to treatment. The illustrations of the subject matter are quite sufficient to give a comprehensive understanding.

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THE YEAR'S ACHIEVEMENT*

GEORGE L. LE FEVRE, M.D.†

MUSKEGON, MICHIGAN

I esteem it a privilege, not to be lightly regarded, to express my thanks for the honor conferred upon me in making me president of the Michigan State Medical Society. The coöperation I have received from the officers of the association, the council and executive committee has been splendid. The year 1933 will be remembered by everyone, particularly in this state, as the major year of depression aggravated by bank failures which in many instances resulted in real hardship to many of our members. The present year, however, has witnessed a gradual recovery; or have we become reconciled, adjusted to the privations of the depression years? It is times like the past three or four years that try men's souls. However, we have not given in, so that today we look forward to a brighter future.

Our society is first among state medical associations to attempt solution of the economic and social problems that are confronting medicine today. Three years ago a committee was appointed to undertake the survey of health agencies of this state. Their work has been thoroughly performed, as has been seen in the extensive and well balanced report which was made to the House of Delegates at the meeting in Grand Rapids last year. This report, complete as it was, is only in a small way evidence of the very extensive and thorough investigation made by the committee up to that time. The most of their work cannot ap-

pear on paper. The recommendations and the report were accepted by the House of Delegates, except the clause referring to the health insurance. It was thought at the time that conditions did not warrant that the society commit itself to any definite proposition of health insurance until further study and investigation had been undertaken. The committee was dismissed and a new committee on medical economics was created. To this committee was appointed the personnel of the older committee, together with additional members. The committee on economics had since been active in the study of the situation and made a report at a special meeting of the House of Delegates held in Flint on April 12th of this year. This report was received and certain steps taken with which all have had an opportunity to familiarize themselves, since a full verbatim report of the special meetings of the House of Delegates was published as a supplement to the May number of the JOURNAL OF THE MICHIGAN STATE MEDICAL SOCIETY. Numerous persons, philanthropists who have evidently experienced

*President's Address before the 114th annual meeting of the Michigan State Medical Society, Battle Creek, September 12, 1934.

†Dr. George Louis LeFevre is a graduate of Hahnemann Medical College, Chicago, 1891. He did post-graduate work at New York Post-graduate School 1901; Flower Hospital, Surgery 1906; University of Edinburgh, 1911. He is a Fellow of the American College of Surgeons, was president of the Michigan State Board of Registration in Medicine from 1913 to 1929, is past president of the Muskegon County Medical Society, and has been Chief of Staff, Mercy Hospital, Muskegon, twenty years.

a change of heart, have sought means of disposing of their surplus wealth by turning their attention to the affairs of the medical profession. Socialists and so-called social workers have striven to justify their position in the world, and many whose sole aim would be to exploit the medical profession for gain, by changing the old time relations of physician and patient in the guise of caring for the under privileged or so-called indigent, have been vociferous. The time honored traditions of the medical profession have insured that no one suffer from want of medical care since the profession has borne the burden with very little complaint. Had the protest come from physicians in the active practice of their profession, such a movement would at least have had the semblance of logic; but it has come from the sources mentioned.

A wise man will always be prepared for any possible influence that may effect a change in his position, social, economic and otherwise. The medical profession of this state, whatever the state may have in store, will not be caught napping.

In response to a resolution by the Michigan State Medical Society delegation authorized by the special meeting of the House of Delegates at Flint a special committee of the American Medical Association delegates was appointed to study the Michigan recommendations and to define the attitude of the National Association towards mutual Health Service. The report of this committee was published in full in the July number of the JOURNAL OF THE MICHIGAN STATE MEDICAL SOCIETY and I hope read and studied by every one. Ten points were emphasized, all or most of these points are in agreement with the position adopted by the delegates of the Michigan State Medical Society. The reference committee did not, however, recommend any specific course or so-called plan for the future. The recommendations of the committee were adopted by the House of Delegates of the American Medical Association.

In spite of it all, there is considerable apprehension in several state societies in this country. We have stressed the so-called New Era. Almost every department of human endeavor is being affected. Can medicine escape? I have already mentioned some of the extra professional factors that are at work sowing seeds of discord among

the laity as well as seeds of fear and resentment among the medical profession. It seems within the scope of presidential addresses to discuss the subject, *quo vadis?* Instead of a policy of drift and inaction a policy of planned and sustained action would seem the wiser. Should some form of compulsory state medicine loom in the near future, and who can say that it will not, should not medicine be prepared to meet it? It is believed that the President of the United States favors old age insurance. This is only a brief step to unemployment insurance, which in European countries has included also health insurance. The *New York Times* of May 18, 1934, contained the following significant paragraphs. The speaker was Harry L. Hopkins,* Federal Relief Administrator:

"You aren't going to get health insurance if you expect people to do it voluntarily. I am convinced that by one bold stroke we could carry the American people along not only for health insurance but for unemployment insurance. I think it could be done in the next eighteen months.

"Insurance against sickness is known to appeal deeply to the President, and the recommendation, should he decide to make it this time, will represent ideas he has been working out for several years. He is believed to favor a system based on compulsory contributions by employers for the benefit of their employees by the establishing of 'sickness reserves' as the proposed unemployment insurance provides against periods of industrial depression."

It seems almost a truism to repeat that we have entered an era of comparatively low incomes. Of the population of the United States it is said that half of the total income is received by 10 per cent of the people and for a number of years another 10 per cent have had no income at all; they have depended upon public and private funds for their existence. The basic needs of mankind have been set in the following order: food, clothing, shelter, and medical care. Medicine occupies a peculiar position. In spite of the fact it is a basic need, it comes in after the other basic needs have been met, with as a rule no financial provision made for it. The doctor is usually the sufferer. The traditions of his profession demand that he give his services first, with remuneration as a second consideration. This ethical ideal is not expected of any other of the purveyors of basic needs. They demand payment before delivering the goods. The

*See also H. L. Hopkins, *New York Times*, Sunday edition, August 19, 1934.

doctor is, therefore, the real sufferer, inasmuch as when his fee is not paid, he is hampered in his ability to render medical aid as he should, hampered in his private life and his family is compelled to lead a life of unwarranted retrenchment. And yet the cry for cheaper medical care has originated outside of the medical profession. Whatever inconveniences physicians have experienced, it is only within comparatively recent times that they have taken time off to discuss the economic situation at all.

However, we are confronted with a situation. I have already referred to the ten points adopted by the Committee of References of the House of Delegates of the American Medical Association. In spite of it all, however, continued study of the situation not only by specially constituted committees but by every individual member of the State and National Association is necessary, if medicine is to retrieve the autonomous position it once held. Should the predictions of Mr. Hopkins, Federal Relief Administrator, just quoted, be fulfilled what position will the medical profession be in to meet the situation? Liberty may be purchased only at the price of eternal vigilance.

It is gratifying to note how our membership have welcomed the opportunity to keep abreast with the latest advances in medicine and surgery and allied specialties. Within the past decade postgraduate instruction has become one of the most important subjects that concerns the medical profession, according to a recent editorial in *THE JOURNAL OF THE MICHIGAN STATE MEDICAL SOCIETY*. The demand at the beginning of the decade just closed was not great. Those seeking graduate instruction were for the most part physicians who looked to leaving the ranks of general practice to become specialists. The only sources open to them were proprietary postgraduate medical schools which offered courses more or less limited, particularly limited for the graduate student by the magnitude of the tuition charged. Few, comparatively, went abroad to European centers where they were at a certain disadvantage through lack of understanding a foreign language or by listening to a professor who wrestled with broken English.

Undergraduate instruction has always received the major emphasis in this country until now our medical schools are among the

best in the world. Post-graduate medicine, however, has taken on a new impetus during the past six or seven years. It has become a matter which concerns the general practitioner even more than the specialist. The demand for such instruction on the part of the profession at large is steadily growing and the time may not be far distant when we will have numerous adequately endowed institutions for the purpose. According to the 1932 report of the commission on Medical Education in the United States, about 3,500 doctors take resident post-graduate courses in the United States and a thousand go abroad. A little over 4 per cent of the medical profession of this country consider it an important matter to leave their practice for systematic post-graduate study. This does not mean, however, that the majority may not endeavor to keep abreast of medical progress in other ways. New literature, periodic, in the way of medical magazines, and new books or works periodically revised are in great demand; these together with attendance on medical meetings constitute the means of advancement for a large number.

In many instances the demands of medical practice as well as the economic situation render it inconvenient for physicians to leave home without great sacrifice. For such, who are in the majority, the extension post-graduate courses have proved of inestimable value. In Michigan the coöperation of the Michigan State Medical Society and the Department of Post-Graduate Medicine at the University of Michigan is too well known to require more than mention to the profession of this state.

The short intensive courses given jointly by the Department of Post-Graduate Medicine of the University of Michigan and the Michigan State Medical Society have increased in popularity each year so that it has been considered advisable to establish the work at two new centers, namely, Flint and Battle Creek-Kalamazoo. There is no better evidence of good faith on the part of the medical profession than the efforts to keep up to date and thus give the patient the best the science has to offer regardless of price.

Then there is the question of overcrowding of the profession, a matter, however, the regulation of which concerns the medical

colleges and the State Board of Registration in Medicine. During the year 1933, 5,012 persons entered the medical profession through licensure. During the same period 3,500 physicians died, adding to the profession approximately 1,500 persons.

Students of vital statistics maintain that the population of the United States is tending towards stability, since a study of the decade 1920 to 1930 shows an increase of only six-tenths of one per cent a year. It is evident that the medical profession is increasing in number more rapidly than the general population.

According to the latest available statistics there is one licensed physician to every 780 persons in the United States. The proportion in England is one to 1,490; in France one to 1,690; in Sweden one to 2,890. Of course we are living in an age of "overcrowding." No profession or vocation is exempt.

To limit the number of students attending our two Class A Colleges, the University of Michigan Medical School and the Medical Department of Wayne University, would not materially reduce the proportion of physicians to population in this state, for the simple reason that a great many of our graduates go elsewhere to practice and our cities in particular attract large numbers of graduates from Medical Colleges outside the state. The graduates of medical colleges in states with preponderantly rural population leave the state almost as a body for locations elsewhere.

One way of solving the problem would be to copy the plan adopted in Sweden, namely, state regulation, which would not be popular in our kind of democracy. Another plan to mitigate the congestion would be to confine the practice of medicine to doctors who have met the state requirements in pre-medical and medical training and thereby eliminate the cults. However, that would involve political influence which at present does not exist for the medical profession in this state.

An activity of the society that cannot be too strongly stressed is the medical defense feature, under the able secretaryship of Dr. W. J. Stapleton of Detroit. During the depression there has been an increased disposition on the part of unscrupulous patients to obtain easy money by bringing charges of malpractice against physicians who may have attended them. Many of the charges

prove to be little short of attempted blackmail. Here we repeat the admonition that physicians should be very careful about passing judgment on the after-results of other physicians' treatment, particularly if such results are not satisfactory to the patient. It has been said with a great deal of probability that a shrug of the shoulders or some other very unconsequential expression is all that is needed to make a disgruntled patient feel that he was being badly treated. The medical defense afforded by the society may prove worth many times the membership fee to the state society.

The attention of the Medical Society has been drawn to a condition in some communities which might bear investigation. A few hospitals in the State are branching out to the extent that they are competing with the private practitioner, by the establishment of clinics and the solicitation of laboratory and x-ray work. Such a condition, I believe, is best handled through the individual staffs of these hospitals, and, when such conditions exist, the county society, through the staff members, should attempt to cause the necessary changes to be made.

It is for this reason that all of us who are staff members will be serving our profession and our hospital better if they keep in close touch at all times with the management of the hospital. The profession needs the hospitals and the hospitals need the doctors.

It is ever true that there is more unrest economically during a depression than during more normal times and many social changes appear of utmost importance at this time which will be minimized greatly as business speeds up to its usual pace. If these social changes are too hastily adopted, the action may have to be rescinded later. I am quite optimistic about the nation's progress and I believe we will hear less crying for social changes in the very near future.

A few words in commendation of the Women's Auxiliary. Within its comparatively brief history it has become co-extensive with organized medicine. The organization consists of County Units which send delegates to the state auxiliaries and the state has representatives in the National Association. Medical Science is increasing in its appeal to physicians' wives; much as I dislike the word propagandist, our wives

have become valuable disseminators of medical information to their non-medical associates. Their activities vary from the purely social to the intellectual, for the members of one county auxiliary have undertaken a series of lectures on medical history. Sunday afternoon musicals have also been numbered among their activities. I wish to pay my regards to the untiring efforts of Mrs. Whitney, President of our state auxiliary, and her able officers for the activities the past year.

As a state society, we have been extremely fortunate in having had the services of Dr. Fred Warnshuis as secretary for twenty-two years. It has been through his efforts that much of the progress we have made in organization, in post-graduate

work, and many other activities, has been achieved. It is with regret that we are losing him at this critical time, and on behalf of the Society I wish him all the luck possible in his new field.

And now we come to a parting of the ways. You have conferred on me the highest honor that you as an organization can bestow in making me your president. I can assure you I have tried to do my best. I have long been associated with organized medicine in the State, as an officer in my county society, on the council, and now as state president. During this time I have enjoyed the sincere coöperation of the membership, the council, and the officers. For all this I thank you and take my place among the unofficial profession with none but the pleasantest memories.

MEDICAL EDUCATION IN MICHIGAN*

RICHARD R. SMITH, M.D., F.A.C.S.†

GRAND RAPIDS, MICHIGAN

I am deeply appreciative of the very great honor which has been conferred upon me in being chosen as your President. I am well aware, too, that at this critical period in medicine the office carries with it more than the usual amount of work and responsibility and am only hoping that I may fulfill my duties half as well as Dr. Le Fevre has fulfilled his. The direction of the policies of the society and the control of its affairs rest with the House of Delegates. The House merely delegates to the Council, the Executive Committee and other committees the many details existing in an organization of this size and importance. The President is supposed to take part in the ceremonials, to act ex-officio on the Executive Committee, and to be well acquainted with the affairs of the Society and its various problems. I think this a very wise plan of government. With the advantage of a certain detachment he is in a position to appreciate the broader aspect of the problems of the Society rather than details. It has been told to us time and time again in these days when the livelihood of every physician has been a serious problem and economic problems as a whole threaten our very existence as a dignified and honorable profession, that we should hold to fundamentals, and I am thoroughly in accord with this idea. Of one such fundamental I

wish to speak briefly today. We will succeed individually in medicine very much according to our merits, which means, of course, the service which we are able to render the public. I am fully aware that character, hard work, and the ability to inspire confidence in our patients, enter very largely into the success of every physician, but I am also aware that in the long run a man's knowledge of medicine and the ability to apply it is more essential to success than any other one factor. Medical education, therefore, becomes a factor of the first moment, and we have been wise enough in this state to recognize this and provide for it.

I hope this year to speak on several aspects of medical education in Michigan and its institutions, but with the short time al-

*Read on induction into office as President of Michigan State Medical Society, Battle Creek, Michigan, September 12, 1934.

†For professional note see page 569.

lotted me I am going to speak today merely of one important factor in medical education here in the state, namely, the University of Michigan and the part it is taking in under-graduate, graduate, and post-graduate teaching.

The University of Michigan is one of our oldest and most important state institutions. Its purpose is higher education and its attitude entirely constructive and unselfish. It is thoroughly interwoven in the social and economic fabric of the state and essential to its well being. It fits men for a better enjoyment of life, makes for sounder public opinion, and furnishes a large number of our professional men, without which we could not exist. It belongs to the people of Michigan and is one of our most cherished and proudest possessions. Since health is of prime importance it has lavished an immense amount of thought and effort on Medical education. The Medical School at Ann Arbor was opened in 1850. A candidate for a degree was required to attend two courses of lectures of six months each, and to have spent one year with a practitioner—a so-called preceptor. In 1877 the curriculum was extended to two years of nine months each, and in 1880 three years of study became necessary before a candidate could present himself for final examination. In 1890, the compulsory term of study was extended to four years, allowing a better gradation of the curriculum and the extension of laboratory teaching. Since that time there has been a gradual and marked improvement in teaching and teaching methods. Of equal importance have been the increased requirements for admission. In 1890, a combined curriculum in Letters and Medicine was provided and graduate courses were offered. In 1909, the requirements for admission were advanced to a minimum requirement of two years of collegiate study, and step by step to a present-day requirement of ninety hours, or practically three years of such pre-medical work. It includes Chemistry, Physics, Botany, Psychology, Zoölogy, German and French, English Literature, and other cultural subjects. This pre-medical work is of infinite value in establishing a broader, better foundation for the study of medicine with all it means to its better understanding of medicine, and enjoyment of its privileges.

The University in its graduate school pro-

vides for the continuation of medical study by graduates in Medicine. Those availing themselves of these opportunities are those that desire to become, perhaps, research workers or teachers, or to pursue one of the specialties in medicine. The main object of the Medical School, however, is to train men for practice in the field that they may render better service to the 5,043,000 inhabitants of Michigan. To be sure, all physicians graduating from the University do not practice in Michigan, and the work in the field is performed also by many who come from other centers of learning. According to the Directory of the American Medical Association (1934) we have in Michigan 5,678 physicians. Of these, 1,661 (about 29 per cent) are graduates of the University of Michigan Medical School [1,522 (about 27 per cent) of the regular school, and 139 (about 2 per cent) of the homeopathic school]. Of the 5,678 physicians in Michigan, 3,218 (about 60 per cent) are members of the State Society. Of these, 1,016 (about 31 per cent) are graduates of the University of Michigan [940 (about 30 per cent) of the regular school and 76 (about 1 per cent) of the homeopathic school]. The School of Homeopathy is not now in existence. The graduates of the University of Michigan determine, in no small degree, the standard of services rendered the people. The merit of the service rendered the public determines mainly our position with the people, and the respect accorded us. A high standard of medical education is the strongest bulwark we have against all forms of irregular practice and whatever the economic conditions of the future, and whatever the legislation, we may have little fear as long as a high standard of medical education is kept ever in the foreground.

Soon after the war a new era in medical education began in Michigan. It came about through a keener realization by the profession of the necessity for post-graduate study. The movement was headed by this Society. Meetings, conferences, and clinics were inaugurated, directed to give opportunity mainly to the general practitioner. In time it became apparent that we had need of our medical schools in this program. In 1926 the new hospital at Ann Arbor was opened. In January, 1926, Dr. Jackson, Chairman of the Council, invited the faculties of the University Medical School and

of the Detroit College of Medicine to discuss post-graduate medicine at the annual meeting of the Council. A committee was formed and a year later rendered a report reviewing conditions in the state and the desirability of furnishing a comprehensive program of post-graduate education. As a consequence, a department of post-graduate medicine was established at Ann Arbor with the understanding that the Detroit College of Medicine, and the State Society coöperate in the enterprise. Dr. James D. Bruce was made head of the department where he now serves. He has coördinated the work of the three organizations with astonishing efficiency and harmony. Post-graduate teaching was begun in Detroit and later at Ann Arbor. The growth of attendance demonstrates that we are on the right track. At Ann Arbor in 1928-1929 the registrations were forty-seven; the last year 277.

It has been shown by elaborate studies that a practitioner needs a complete renewal of his medical education once in five years if he is to continue to deliver an adequate quality of service. At present it is believed that this can be best attained by short intensive courses covering eight different general fields of interest to the practitioner and is designed with the thought of minimum loss of time and expense to him.

It was recognized early in the work that

there were many men in the state perfectly capable of teaching. There are sixty of these now enrolled as extra-mural lecturers in the Department of Post-Graduate Medicine of the University of Michigan Medical School.

Lastly, centers of teaching have been established at Flint, Grand Rapids, and Kalamazoo-Battle Creek. These centers will open easily available opportunities to a large number of practitioners. One may easily visualize the time when every practitioner will, as a matter of course, avail himself of these opportunities for post-graduate study and keep well abreast of his times. It will add tremendously to his usefulness, his position in the community, and his enjoyment of his work and life.

I would call your attention to the elaborate report of the committee on Post-Graduate Medical Education and the needs of the general practitioner. Dr. Jennings, as chairman, and Drs. Davis and McClure composed this committee. It is by far the most comprehensive and splendid study ever made of the subject. Surely medical men have been brought to a keener realization of the fact that they are engaged in the practice of a science, and that a science requires lifelong intensive study, and that such study must not cease with graduation.

PRIMARY CARCINOMA OF THE BRONCHI

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DETROIT, MICHIGAN

Within recent years primary cancer of the bronchus and lung has become a rather common clinical entity, and such cases seem to occur throughout the country in increasing numbers. During the past five years, thirty-five such cases were observed at Harper Hospital, Detroit, Michigan. During this same period of time there were thirty-four cases of metastatic cancer of the lungs. Actually the cases of primary bronchus and lung malignancy exceeded the supposed more common metastatic cancers of the lung by one case. In our series of thirty-four cases, three of them occurred in the year 1928, five in 1929, three in 1930, eleven in 1931 and thirteen in 1932. No doubt one reason for the rather large number of cases seen at this institution is the reference of such patients for deep x-ray therapy. In this series of cases

are two apparent cures, one of which is reported in detail. A study of the symptomatology, physical signs and other clinical features of the disease is of interest and has been thoroughly and carefully presented by Adler¹ in his monograph, McCrae, Funk and Jackson,⁸ also Fried,^{5, 6} and this article becomes something of a review of known facts.

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Owing to the varied manifestations of this disease, such cases come not alone to the internist and general practitioner, but to the surgeon, orthopedist, laryngologist, gynecologist, radiologist, etc. The importance of a careful understanding of this condition and of constantly being on the watch for such cases is obvious. In the minds of many, this is considered an extremely rare disease; as a result, many diagnoses are missed or are made at a late stage when no therapeutic aid can be given.

Various etiologic factors have been presented to account for the increase in frequency of this disease. Among the commonly advanced theories are (1) gaseous fumes as from the exhaust of automobiles and factories, (2) road dusts which contain particles of tar and barium, (3) preexisting tuberculosis, (4) increased frequency of influenza in recent years with resulting bronchial irritation, (5) use of tobacco, (6) pneumoconiosis—Adler mentions cancer of the lung occurring in miners working in mines in Schneeberg, Silesia. These ores contain considerable arsenic and radioactive substances and are apparently a definite etiologic factor. A recent editorial in the *Journal of the American Medical Association* has commented upon this fact.³ It is difficult to state which factors may have definite bearing upon the condition.

PATHOLOGY

Osler⁹ has stated that 85 per cent of primary lung cancer arises in the bronchus and the remaining 15 per cent in the lung parenchyma. The bronchial or bronchogenic type arises in the cylindric epithelium or mucous glands of the bronchial mucosa while the parenchymal type arises in the alveoli. The bronchial type often has its origin at the first bifurcation of the main bronchus² and occurs as a small nodular mass which soon ulcerates and may project itself into the lumen of the bronchus, extending down the bronchus or up towards the trachea. It may become papillomatous in nature and movable, thus producing a variety of physical signs. It may invade the lung parenchyma and also extend to the hilus region with lymph node and mediastinal involvement. Parenchymal invasion may be extremely rapid and closely simulate pneumonia. Annular constriction of the bronchus and trachea may occur with re-

sulting asphyxia. Such a case has been reported by Weller.¹¹ The variable growth of the cancer as well as the points of origin accounts for extreme variance in the symptomatology, physical signs and x-ray findings. Further confusion in the diagnosis may be occasioned by such secondary complications as lung abscess, gangrene, atelectasis, bronchiectasis and pleural effusion. Pleural effusion may be due to direct extension to the pleura or pleural irritation. The study of the metastases is important because in some cases the early symptoms will be entirely those of the secondary lesions. This is mentioned by Weller in his excellent article. Metastasis may occur in the osseous system and involve the spine, clavicle, arms, legs, also the brain, liver, kidneys, adrenals and regional lymph nodes, especially those of the cervical region. Biopsy of cervical nodes has often disclosed a correct diagnosis.

The condition occurs more commonly in males and generally past the thirty-fifth year. It is located about equally in both sides; however, there may be some predominance on the right.

SYMPTOMS

The marked variation in symptomatology can be readily understood when one considers the underlying pathology of this disease. Such factors as location of the primary lesion, its size, direction of growth, as to whether it be in the bronchus or pulmonary tissue itself, the degree of malignancy, structures secondarily involved, occurrence of early metastases, ulceration, effusion, secondary lung abscess, gangrene and atelectasis all serve to confuse the clinical picture, bring about a complicated history with unusual symptoms and physical signs.

The onset is usually gradual but often is abrupt and one is inclined to think of an acute bronchitis as such patients usually have chest pains which are localized. Chest pain is a rather constant symptom throughout the entire disease and should be given consideration in arriving at a diagnosis. Cough is another early symptom and it may be mild or severe. Early it is generally unproductive and may be spasmodic and protracted, causing one to think of pertussis in the adult. It may be very annoying and very difficult to check and may be accompanied by some wheezing. This occurred

in one case under our observation in which the cancer was apparently primary in the lung itself. In another case the cough sounded hollow as in aneurysm with recurrent laryngeal nerve involvement. In this same patient hoarseness developed, later marked aphonia occurred. As a rule the cough is unproductive at the onset, or small amounts of clear mucus may be expelled, later the sputum may become purulent and foul if secondary lung abscess or gangrene occur. Hemoptysis generally occurs at some time during the course of the disease; it may be seen early and be profuse or there may be blood streaked mucus. One must mention the occurrence of so-called "current jelly" sputum, which is sputum containing mucus with blood clots and which has been considered diagnostic. However, there is nothing diagnostic about the type of sputum in this disease. Profuse pulmonary hemorrhage is rare; however, this has occurred and at times early in the course of the disease. At this point one must digress to state that unexplained cough and hemoptysis always demand careful and thorough study and in many instances bronchoscopic examination. Fragments of tumor tissue have been expelled and examination of such material has made a diagnosis.² Tubercle bacilli may be found in the sputum as this disease may coexist with lung cancer.

Dyspnea may be present in all degrees of severity and much depends upon the structures involved. In marked bronchial obstructions or atelectasis, it causes terrific distress and suffering. Occasionally dysphagia occurs from esophageal involvement. There is loss of weight and strength, also impaired appetite. Cyanosis often occurs and with the development of pleural effusion or atelectasis the condition may closely simulate cardiac decompensation. Clubbing of the fingers is occasionally seen.

At times the symptoms, at least the early ones, will be entirely due to the metastases, which may be extensive, involve distant structures and the point of origin be in a small localized bronchial lesion.

Mediastinal symptoms are often encountered, such as unequal pupils, unequal radial pulse and blood pressure, dilated chest and arm veins, also edema and congestion of the upper half of the body. Pains in the head, arms, spine, legs may be present due to metastases and greatly obscure the diag-

nosis. Icterus may be present due to liver involvement. Coma from asphyxia is also mentioned.

Fever is generally present after the disease is well established and may be slight as 100 degrees, or higher and of a septic type, particularly in those cases with complicating abscess. However, occasional cases are seen without fever and some writers stress this point in making a differential diagnosis between this condition and tuberculosis.

The cough, with hemoptysis and fever, often brings such cases to the tuberculosis sanitarium with the erroneous diagnosis of tuberculosis. Chills and sweats may further complicate the picture. As can be noted from the above description, there is nothing characteristic in the symptomatology of this disease.

PHYSICAL SIGNS

There is probably greater variation in the physical signs of this disease than in the symptomatology.¹⁰ There are no specific physical signs and it may be said that no two cases are exactly alike. Early in the course of the disease the signs may be nil. Later there may be a small area of dullness corresponding to which there may be diminished breath sounds and vocal fremitus with a few coarse râles, while above and below the involved area there is normal resonance. This is particularly the case when the initial involvement is parenchymal. The involved area may gradually increase in size until ultimately an entire lobe is involved. There may be limited expansion over the affected area.

In those cases of bronchogenic origin, atelectasis often is present and the signs of this condition may be very evident only to disappear later due to the obstruction moving. In this type the neoplasm acts as a ball valve foreign body in the bronchus. Signs of pleural effusion may occur at any time but generally later in the course of the disease and aspiration may disclose hemorrhagic fluid which is of material aid in arriving at a correct diagnosis. Often in making the chest aspiration the needle will meet with the tumor and this gives one the impression of perforating a firm mass. A large amount of serosanguinous fluid will often be removed and in a few days it will quickly reaccumulate. X-rays of the chest

following removal of the fluid will frequently show the tumor mass distinctly, especially if a small amount of air is injected. At times, with characteristic physical signs of fluid present, none will be obtained upon aspiration. In such cases a very large solid tumor is present. Owing to secondary pulmonary changes, the signs of pneumothorax, lung abscess and empyema are often noted.

In certain cases the physical examination will reveal signs chiefly of the metastases as has been previously mentioned.

X-RAY FINDINGS

The x-ray findings are variable and often the shadows are very difficult of interpretation especially in early cases. However, progression of the lesion can often be determined with plates made over several weeks period. The parenchymal type of lung cancer is more evident in its early stages by x-ray examination than the bronchogenic. Lipiodol injections at times have given considerable aid in the x-ray diagnosis. The x-ray is of value also in confirming the clinical diagnosis of metastases.

BRONCHOSCOPY

Bronchoscopic examination constitutes one of the most important steps in arriving at a correct diagnosis. Particularly is this evident if a section of tumor mass can be removed and examined microscopically. The work of Chevalier Jackson and his colleagues has done much to impress upon the medical profession the importance of bronchoscopy in all obscure chest cases.

DIAGNOSIS AND TREATMENT

The diagnosis would be correctly made in a far greater number of cases if this condition was kept in mind. Because of its peculiar manifestations and rarity as compared with many chest conditions, it is not given proper consideration by the medical profession. The importance of a careful history and complete physical examination, x-ray and bronchoscopic findings has been stated. The removal of a metastatic mass or lymph node has made a correct diagnosis in many obscure cases. This condition must be differentiated from pulmonary tuberculosis, aneurysm, Hodgkin's disease, lung abscess, lymphosarcoma, foreign body in the bronchus, echinococcus cyst of the lung, etc. Great care must be used to exclude

aneurysm because of danger of bronchoscopy in such cases.

The prognosis is not good and neither are the results of therapy. However, if an early diagnosis is made and treatment instituted, at times much can be done. For the pedunculated type, bronchoscopic removal with local radium implantation followed by deep x-ray therapy may be followed by a good result. Deep x-ray therapy is in general use; however, as these neoplasms are generally not radiosensitive, cures cannot be expected.⁴ Nevertheless the number of apparent cures is on the increase and everyone who has seen groups of these patients can mention proven cases, whose outlook seemed hopeless, now restored to health and normal activities. Luddy and Vinson⁷ in a recent paper, presented before the American Roentgen Ray Society at Detroit in September, 1932, stated that from their experience, palliative treatment is best accomplished by high voltage therapy. They have had seventy-one proven cases of bronchogenic carcinoma. Twenty-nine of these cases were not treated. Ten of the forty-two patients treated by roentgen ray alone were living from fifteen months to four years after the diagnosis was made.

Case Reports

BRONCHOGENIC CARCINOMA

Case 1.—H. W., white, male, aged thirty-five, occupation merchant. This patient was admitted to Harper Hospital, Detroit, on January 4, 1929, and was discharged on January 9, 1929. On January 2, 1929, he had a chill with general aches and pains over his entire body. He had a temperature of 101 degrees and apparently had influenza. However, he had been coughing considerably and raised a large amount of blood tinged sputum. The temperature and coughing subsided in four days. He continued, however, to have hemoptysis. He stated that in October, 1924, a gastroenterostomy had been performed for duodenal ulcer. About one year later he had his first pulmonary hemorrhage. This has continued at various intervals since and the amount of blood raised is from one teaspoonful to one-half cup. There was no loss in weight, no night sweats, no chest pains, his tonsils had been removed, no gastric symptoms, no tarry stools. Family history is negative. Physical examination revealed a fairly well nourished adult male. Pupils reacted properly to light and accommodation. Tonsils have been removed. Heart was not enlarged, action was regular and there were no murmurs. Blood pressure was 104/70. Lungs: The breath sounds were diminished over the left lung posteriorly in the region of the angle of the scapula. Over this area were heard definite moist râles. The balance of the physical examination was negative.

Laboratory Data:

Blood count: R. B. C. 4,250,000; Hgb., 65 per cent; W. B. C., 10,600; Polys., 86 per cent; Lymph., 15 per cent.

Urine examination was negative.

Sputum was found negative for tubercle bacillus.

N. P. N., 37.5 mgm; blood sugar, 0.095 mgm.

Wassermann test was negative.

At that time x-ray examinations showed prominence of trunk marking in the lower left field. The heart was not enlarged and there was no parenchymal infiltration. After five days the temperature became normal and the patient was discharged from the hospital, but was informed that the hemoptysis apparently was not due to his acute illness and that further investigations should be made in order to establish its cause. He was then referred to Dr. Louis H. Clerf, Jefferson Hospital, Philadelphia, Pa., for bronchoscopic examination. The following is the report of the bronchoscopic examination as well as the histologic report of tissue obtained:

Bronchoscopy for Diagnosis (January 19, 1929, by Dr. Louis H. Clerf): "The trachea and the right bronchus appeared practically normal; the orifice of the right upper lobe bronchus seems unusually prominent. The left main bronchus appeared normal; in an internal subdivision of the bronchus of the left lower lobe, there was found a large blood clot. Following removal of this, there was moderate bleeding and it was not deemed advisable to continue with the bronchoscopy. Another bronchoscopy will be done."

Bronchoscopy for Diagnosis (January 21, 1929): "Following the removal of the small quantity of blood in the internal subdivisions of the left lower lobe bronchus, there was found a small mass of tissue suggesting granulation tissue springing from the posterior bronchial wall; it was intensely friable and a small mass was obtained for histologic examination."

Diagnosis: Stenosis of subdivision of left lower lobe bronchus. Inflammatory tissue? Malignant neoplasm? Specimen removed for biopsy.

Histologic Report: "The fragments of tissue are largely composed of inflammatory exudate, including fibrin, leukocytes and granulation tissue. There is a rather marked leukocytic infiltration in the granulation tissue. A few small clumps of epithelium are observed scattered throughout the connective tissue, but evidence of malignancy is not observed. However, the significance of the presence of the epithelial cells in the granulation tissue could not be interpreted due to the fact that the pieces were very small, and no normal structure is observed."

In February, 1929, bronchoscopic examination was repeated by Dr. W. A. Hudson of Detroit, a biopsy was performed and this revealed carcinoma. On May 2, 1929, the patient was bronchoscoped by Dr. Hudson and the left lower secondary bronchus showed definite ulceration. It had the appearance of carcinoma. Radium was inserted by Dr. Hudson. Subsequently Dr. Leucutia administered deep x-ray therapy. On July 6, 1929, this patient was again admitted to Harper Hospital and bronchoscopic examination by Dr. Hudson revealed that the lower stem of the bronchus was normal except for congestion, which is moderate in the region of the lesion as observed on previous occasions. The mucosa has a whitish appearance; the lumen of the bronchus itself is patent; the opening of the tertiary bronchus from which the original tumor was removed was found to be patent and to possess motility that is very close to normal and no evidence of new growth has been seen on this bronchus. At one point a small protrusion is seen. The mucosa over this protrusion is whitish color. Because of this finding radium was again inserted. Deep x-ray treatment was also instituted. This patient is today living and enjoying good health. He has had occasional deep x-ray treatments. Recently he had hemoptysis, and chest x-rays were negative. However, he was bronchoscoped by Dr. W. A. Hudson, who reported as follows (December 3, 1932):

"I saw Mr. H. W. about the middle of November, 1932, at which time I performed a bronchoscopy. It was noted that there was no evidence of the former malignancy but at the site which was occupied by this new growth there now remains an intact mucosa which does contain a number of small fairly prominent vessels. Proximal to the site of the former lesion there was encountered a small blood clot which seemed to be located in a vessel that had previously ruptured. Silver nitrate was applied and the patient was notified of the findings and advised to let us hear from him at regular intervals." On September 8, 1934, this man continues to be in good health.

Case 1 is an example of bronchogenic type of carcinoma seen early, given intensive radium and deep x-ray therapy with thus far an excellent result. The cancer may have arisen in an ulcerated lesion in his bronchus which subsequently became malignant.

BRONCHOGENIC CARCINOMA

Case 2. J. M., white, male, aged forty-eight, occupation—waiter.

In September, 1931, this patient developed a series of colds, had dull aching pains over the right chest anteriorly. He also had a cough productive of thick yellow mucus. He became readily fatigued and had night sweats. He was hospitalized at a hospital in Detroit and was said to have had bronchial pneumonia. Subsequently he was discharged. However, the cough persisted along with weakness, night sweats and loss of weight. In January, 1932, he was hospitalized at another hospital in Detroit and here several chest aspirations were done, also the operation of phrenicectomy. There was no history of hemoptysis. The family and past history were negative. On February 3, 1932, he was admitted to Herman Kiefer Hospital and discharged on February 23, 1932. At this time the left supraclavicular nodes were palpable. Examination of the lungs at that time disclosed impaired resonance over the right upper half of the chest anteriorly with coarse râles and harsh breath sounds. This extended well out into the upper portion of the right axilla. Over this area in the right axilla the breath sounds were diminished. The left chest was normal. On February 4, 1932, x-ray examinations disclosed what was considered an advanced mixed type of tuberculosis involving the upper two-thirds of the right lung with a loculated effusion. February 10 lipiodol injection disclosed a cavity in the upper part of the right lung.

Laboratory Data:

R. B. C., 4,160,000; W. B. C., 6,800; Polys., 80; S. Monos., 2; L. Monos., 17; Trans., 1.
Wassermann test was negative.

N. P. N., 22.2 mgm.; blood sugar, 91 mgm.

The sputum was examined nine times and found negative for tuberculosis. A direct smear from the trachea was made for tuberculosis and a culture of the sputum for tuberculosis was negative.

Bronchoscopic examination was performed by Dr. Hammond (February 4, 1932). A 7 mm. bronchoscope was passed. A suspicious tumor mass in the right main bronchus near the junction of the middle lobe bronchus was visible. Biopsy taken; unable to aspirate any large amount of pus from the right upper lobe and middle lobe bronchus. *Impression*: Carcinoma of the bronchus.

Pathologic Report: In a section is a dense layer of stratified squamous cells, smaller than the usual size and showing degenerative changes. These cells

tory tract.) Any disturbance in the normal processes of cell formation leads to different degrees of pneumatization or types of bone formation; dissections of adult temporal bones show three types: the compact or sclerotic; spongy or diploic and cellular or pneumatic. In a single specimen one, two or three types may be present. In a series of several hundred anatomical dissections, it was shown that about 22 per cent were sclerotic; 43 per cent diploic, and 35 to 36 per cent were pneumatic.

In this discussion, we are interested only in the pneumatic type and in how the inflammation gets to the petrous tip or apex. This we are convinced depends upon the degree of pneumatization of the petrous bone. However, in any infectious process one must not forget the virulence of the infection, and the resistance of the patient. No case of petrositis has ever been reported in a sclerotic temporal bone.

Since pneumatization goes out from the tympanic cavity and mastoid antrum, on the one hand to develop the adult type of pneumatized mastoid process, and on the other to develop the pneumatized petrosal pyramid—the routes of invasion become important. They have been listed as follows: first from the antrum or epi-tympanic space above or below the superior semicircular canal, following the posterior superior surface of the petrosal pyramid into the tip; second, from the peri-tubal cells, that is, the cells around the eustachian tube, into the tip; third, through dehiscences in the tympanic wall, or from the peri-tubal cells into the carotid canal, then into the tip.

It cannot be denied, however, that the majority of infections of the petrous pyramid that reach the apex or tip, do so by direct extension through the cells, and these most often along the peri-labyrinthine cells originating in the antrum and epi-tympanic space of the middle ear. Therefore this should be considered more as an extension from a middle ear infection than from a mastoid infection. All infections, however, do not necessarily extend to the apex, nor do they always involve the sixth nerve.

Clinically, these cases classify themselves into two groups: first, the acute case wherein the purulent contents of the pneumatized petrosal pyramid are involved in an acute infection with symptoms which, if not drained, will early lead to an intracranial in-

vasion and a development of generalized meningitis; second, the chronic case wherein nature provides an egress from the encapsulated pus pocket in the petrous tip, and there is formed a fistulous tract from the petrous pyramid which leads to the tympanic cavity, the empyema eventually escaping through the tympanic membrane as a persistent profuse otorrhea. Such cases do not necessarily lead to meningitis but are apt to eventuate in a chronic discharge from the middle ear. In some instances, final healing results without surgical intervention. It has been shown in most of the cases reported, if not all, that suppuration of the mastoid process preceded the development of the suppuration of the petrous pyramid. All cases developed in pneumatized temporal bone and in the majority of instances the suppuration of the mastoid process was operated on and the middle ear cleared up and an interval of time elapsed before the onset of symptoms denoting the spread of the infection towards the pyramidal tip. When the middle ear began to dry, there ensued after a time a reappearance of a profuse ear discharge, the origin of which could not be traced to the mastoid wound. This was accounted for by a rupture of the bone encompassed pus pocket into the middle ear and the avenue of egress being through the cells around the tympanic mouth of the eustachian tube and from these to the middle ear.

Let me repeat, suppuration of the petrous pyramid in a pneumatized bone must be considered as a complication of purulent otitis media rather than complication of mastoiditis.

The symptomatology of suppuration of the petrous tip has been divided into four periods: first, the period of eye pain and aural discharge; second, the period of low grade sepsis; third, the period of quiescence; and fourth, the meningitic period. The eye pain in the majority of instances is the first symptom to make its appearance, although occasionally it is preceded by or associated with a sharp pain in the ear itself. The pain is in the eye on the side of the lesion and is sometimes felt directly within the orbit itself. It is described as a deep seated ocular pain and *at the onset* is nocturnal in character. During the day the patient is more or less comfortable, but as evening comes on the pain becomes more and

more intense. The patient describes it as being just above the eye or through the eyeball. This peculiar type of pain is highly significant of petrosal tip suppuration and puts one on his guard to look for this complication. It is the result of an irritation of the first or ophthalmic branch of the fifth nerve, which is firmly bound down to the temporal bone in its course from the ganglion to and through the cavernous sinus. This branch, altogether sensory in function, supplies the eyeball, the lacrimal gland, the skin of the nose, the upper eyelid, forehead and scalp.

The presence of post-operative pain after surgery on the mastoid process is to be expected. When, however, this pain assumes definite characteristics, it is usually significant of some complication. A dull aching pain felt on the side of the head, in the neck, and persisting for a time after operative interference, is very significant of lateral sinus thrombosis. Pain in the nape of the neck, and in the occiput, makes one suspicious of an impending meningitis.

A posterior fossa lesion cannot, for anatomical reasons, involve the region of the Gasserian ganglion. Since the tentorium separates the middle from the posterior fossa, therefore the fifth nerve, which is wholly situated in the middle cranial fossa, is not affected by a localized infection in the posterior fossa. It is clear that pain in the face and teeth can occur with a lesion located anywhere in the middle ear or mastoid process. This pain will be relieved, however, as soon the source of irritation in the middle ear or mastoid is removed. When surgical removal of the purulent focus in the mastoid process and in the middle ear does not result in cessation of pain, distributed over an area supplied by the second and third branch of the fifth nerve, the persistence of pain should be viewed as suspicious of a petrous tip suppuration, particularly when it is continuous and not of the spasmodic type like tic douloureux or neuritis.

In petrosal tip suppuration, we are more likely to get a constant ache than a spasmodic pain. It has been the experience of most otologists that a simple complete mastoidectomy will cause the middle ear to cease discharging within one to three weeks after the operation. In petrosal tip suppuration, the middle ear continues to discharge

until the lesion in the petrosal tip is identified and eradicated, or else after a period during which the ear was dry a profuse discharge suddenly reappears at the same time or shortly before the onset of the eye pain. There have been other signs which occasionally present themselves early in the course of petrosal suppuration, but are not diagnostic. They are: facial weakness, vertigo, nystagmus and vomiting. The eye grounds or fundus examinations are usually negative, and all laboratory tests are of no value, except the

X-ray Findings.—When a low grade sepsis continues, accompanied by eye pain and aural discharge, in a pneumatized mastoid or temporal bone, it is viewed very strongly as evidence of petrosal tip suppuration. When the drainage is established, either spontaneous or by operative measures, the fever subsides and the temperature gradually returns to normal. This is followed by a period of quiescence which, in the cases reported by Dr. Kopetzky, varied from five to nineteen days, in which they are free from all pain of diagnostic importance. From the standpoint of the patient's safety, this period is considered by Dr. Kopetzky as the most dangerous one, since the evidence leads both patient and physician to conclude that the lesion is clearing up. On the contrary, this period coincides with the invasion of the endocranium. As the lesion progresses, if sufficient drainage is not established through the peritubal cells or through the tract of invasion, the apex becomes eroded. Once the perforation has been formed there results an extra dural abscess which bears the same relationship to the disappearance of pain in the lesion under discussion as does the formation of a subperiosteal abscess in an acute mastoiditis. The inflammatory tension on the dura in one instance and on the periosteum in the other is relieved. The terminal period presents in the main a clinical picture of an acute purulent meningitis. One notes a gradual onset of cervical rigidity, high temperature, Kernig, severe generalized headache, projectile vomiting, and a purulent spinal fluid. It is with great interest to the clinicians that in none of Dr. Kopetzky's cases reported through 1931 was the sixth, or abducens, nerve involved. On the other hand,

many cases are on record wherein an abducens paralysis has been found associated with a suppurative lesion in the petrous tip. Because of the fact that abducens palsy is not a constant symptom in the sense that retro-orbital pain and persistent otorrhea with low grade sepsis are constant, it should not be looked upon as a necessary factor in the establishment of a diagnosis of purulent petrositis.

We have taken up this point in detail because of the insistence of some men to make their diagnosis upon the classical Gradenigo syndrome. The laboratory findings in these cases are not diagnostic excepting the x-ray and in every case where you are dealing with a pneumatic mastoid I believe that a ray should be taken of the petrosal tip at the time of x-ray of the mastoid cells. All of the cases reported before the primary operation on the mastoid process showed on x-ray examination extensive cellular elements or a very completely pneumatized mastoid bone. The ray of the mastoid showed that the pneumatization had extended to the zygoma, the squama, and occipital bone, and suggested the possibilities that the petrous pyramid was also pneumatic. By our method of x-ray we can now take x-rays of the petrous pyramid and in many instances note the progress of the infection in that direction.

REPORT OF CASE

The patient was a nine year old girl who had been having ear trouble for about one year prior to her admittance to the clinic. Her previous history showed that she had whooping cough two years before, and measles three months before. Following the attack of measles, she developed more definite symptoms of mastoiditis. She was admitted to the hospital July 26, 1932, and was operated on August 2, 1932. There was no dural exposure, but the lateral sinus was exposed. The mastoid cavity was very large and deep and there were cells extending behind the lateral sinus and into the zygoma and into the tip cells, showing it to be a large pneumatic mastoid. The patient was discharged eight days after operation, with a normal temperature, and with her ear still discharging. She returned to the clinic one week later, August 17, with the history of high temperature the night before and was admitted to the hospital for observation. The temperature subsided, but ran a rather irregular course, not going above 100. She complained of a headache which extended behind the right eye and there was evidence of partial paralysis of facial nerve and

the extra-ocular muscles. The ear was discharging more freely but the discharge from the mastoid wound was lessening in amount. The headache and paralysis progressed and she was again operated on September 2, 1932. At this time granulation tissue in the mastoid cells was curetted out and the cavity and cells were cleaned out behind and below the semicircular canals. There was a fistulous tract extending down in the petrous portion of the temporal bone. The mastoid culture showed a streptococcus infection. The blood showed 12,800 white cells and 80 per cent polymorphonuclears. Blood Wassermann test was negative. At this operation there was also an extensive exposure of the dura. The facial paralysis progressed and the patient developed a definite nystagmus. The headache and eye pain disappeared following this second operation. Three days after the operation, the spinal cell count, which was above normal at time of operation, was 2,900, with a 95 per cent polymorphonuclears, but no organisms were found. Repeated spinal and cistern punctures were taken daily for five days. The spinal fluid cell count dropped to 180 cells with 90 per cent lymphocytes. At no time was there a positive culture from the spinal fluid. The last spinal puncture was done September 10, 1932. At no time did the fundus examination show pathological changes. The nystagmus cleared and the eye muscles regained their normal function. The child improved quite rapidly and the facial paralysis was clearing up, at time of discharge from the hospital, which was four weeks after the second operation. The eye could be closed almost completely, and the right corner of the mouth could be pulled over almost normally. The ear was dry, and the hearing, which was somewhat impaired at the time of operation, was improved to about 80 per cent normal. This I consider a case of petrositis which was drained posteriorly to the semicircular canal, due to the fistulous tract which was found extending into the petrous tip.

In conclusion, I wish to state that cellular structure of the petrous portion or pyramidal tip of the temporal bone is more frequent than is generally known. It can be expected in any temporal bone which shows a fully pneumatized mastoid structure on x-ray examination. When the cells of the petrous tip become infected it is considered a complication of the middle ear rather than of the mastoid cells. The first definite clinical sign to appear is pain in the area supplied by the ophthalmic branch of the trigeminal nerve which is in the region of the eye. The sixth nerve may or may not be affected, therefore the Gradenigo syndrome, as such, is not diagnostic of petrositis.

The only laboratory examination of any benefit in following the clinical course is the x-ray of the mastoid and the petrous tip. Infections of the petrous tip following complete mastoid operations show themselves clinically as chronic otorrheas, when they do not early lead to meningitis or are not cleared up by operative procedures.

DIPHTHERIA*

SOME OF TODAY'S PROBLEMS

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The successive introduction of the culture method of diagnosis, the discovery and perfection of antitoxin, the extended use of various prophylactic agents such as toxin antitoxin and toxoid, have all of course, markedly reduced the incidence of the disease, but they have not either singly or combined, as yet, eradicated diphtheria. Each new weapon exhibited in the fight against this disease brings forth new and more complex problems needing our attention. It was pointed out by Godfrey‡ that the protection of 30 per cent or more of the preschool population and from 50 to 70 per cent of the school age group seems to prevent the appearance of diphtheria in epidemic form. In his original contribution Godfrey named two exceptions, of which Detroit was one, where this seemingly had not been brought about. Detroit had continued a high case rate in spite of a high protection rate.

In an attempt to find the reason for this exception, last year Detroit started a detailed epidemiological analysis of the situation as it existed at that time. In an unpublished paper presented before the American Public Health Association in 1932, Vaughan and Gudakunst showed that the thirty per cent rule of Godfrey's did hold in Detroit when the figures for the city were broken down into thirty some small areas. It was shown that when the immunization rate of any of these small areas was above thirty per cent for the preschool group, that this area did not have diphtheria in epidemic proportions. This study was continued during the year in order to determine some of the factors that might be contributing to the spread of the disease throughout the city.

A group of six especially well trained field nurses was placed under the joint supervision of the head of the communicable disease nursing division and of a physician acting as diphtheria controller for the city. Every case of diphtheria reported to the department has been carefully studied by this staff—studied as to possible source, spread, and the immunization history of the patient and all the contacts. Much valuable epidemiological information is being gathered by the efforts of this group. Only a few of the

factors involved in the continuation of the spread of the disease can be presented in this paper.

In the latter part of March, 1933, our attention was called to the fact that an inordinately large percentage of our reported cases were in some way associated with two of our large hospitals, which we shall designate as Hospital A and Hospital B. For the most part, the patients reported as having diphtheria had not themselves been patients in these hospitals but it was observed that some other member of their family had been cared for during the immediate past. Of the two institutions, Hospital A contributed by far the greater number, and, because of the nature of the institution, lent itself to a more careful epidemiological study. Of a total of 269 consecutive proven cases reported in Detroit from March 1 through August 31, there were forty-eight (18 per cent) that had in some manner been associated with Hospital A. This was too great a number to be mere chance and the condition had persisted over too definite a period of time to allow for any other thought to be held but that in some way this hospital was a major factor in the spread of the disease. Of 210 previously reported consecutive proven cases, only five had been so associated with this hospital. Due to a combination of circumstances the first part of the outbreak connected with this institution was not completely studied; however, it continued during the months of May, June, and July. During this time, a similar proportion of cases were associated with this hospital as during the first part of the period. It was found that by far the greatest number of cases arising in connection with this outbreak were persons associated with children in attendance at the mastoid dressing clinic

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‡Godfrey, Edward S., Jr.: Jour. Amer. Pub. Health Assoc., 22: No. 3 (March), 1932.

of the out-patient department. There were thirty-five diphtheria cases reported in twenty-eight families, all of whom had one or more of their children in attendance at this particular clinic from one to three times a week.

Every child attending this clinic, all of the professional staff, the parents and guardians accompanying the children to the hospital, and all others coming in contact with this part of the hospital program were repeatedly cultured for the presence of Klebs-Loeffler's *Bacillus*. No adults, parents, nurses, maids, or physicians were found to be carriers. This condition was true not only at the onset but remained so throughout the several months of the outbreak. However, of the ninety-one children in attendance at this clinic during the latter part of June and the first part of July, there were thirty-three who had positive cultures of either the nose, throat, mastoid wound or of all three. There were 36.4 per cent of the children with positive cultures found to have a virulent organism.

The group of children with positive cultures, both virulent and non-virulent, were separated from the rest of the clinic. They were denied the privilege of coming to the hospital on a public conveyance. They were held in partial isolation at home by the use of a warning sign. They were collected in a city bus and brought to the clinic for the necessary medical care at a time when they would not be associated with other children. While in the clinic they were given additional treatments directed at the eradication of the carrier state. While final reports are not yet available, it seems that satisfactory results were obtained by spraying the nose, throat, and wounds with various antiseptics such as mercurochrome, aqueous solution of merthiolate, organic silver salts, etc. During the last month of observation, there were but four additional carriers who were discovered among the remaining children of this entire clinic which, with its various constant additions, involved 150 children in all.

During this period of time, numerous carriers were discovered through various channels throughout the rest of the city. All who could possibly do so were sent to physician's private offices for treatments. It was found advisable to collect the remainder by bus and establish a treatment clinic for

them at the city communicable disease hospital, where the same technic of treatment was used as with the group described for the out-patient department of Hospital A.

Of the group of thirty-five children with positive diphtheria cultures, there was but one who subsequently developed diphtheria in a clinical form. This child was detected with a positive culture during what undoubtedly was the incubation period of the disease and should not be considered as a true carrier. None of the remaining thirty-four developed diphtheria but there were five additional cases developing in the families of these individuals, even after they had been detected, after treatment had been started and all precautions taken to safeguard the home.

Of this group of true carriers known to be infected with a virulent strain of the organism—virulent as demonstrated both by laboratory and clinical tests—there was a degree of immunity that must be considered. The one child who developed diphtheria among this group had never been protected by the use of toxin antitoxin or toxoid; there was no record of a Schick test having been done. Of all the rest, thirty-four in number, twenty-eight had received active protection at some time in the past. Four others were found to be Schick-negative. The remaining two gave no history of active protection. These two were eight and nine years of age.

Here we have a situation of the greatest importance. This was a group of children largely of the younger ages gathered together for brief periods of time from all parts of the city. An epidemic developed among them—an epidemic that was without symptoms. These children had entered this group free from infection, as demonstrated by negative admittance cultures. There was no way of diagnosing or suspecting the state without repeated, careful, laboratory examinations. These children were merely carriers of the disease and they were spreading the true disease to all other parts of Detroit. They had been so protected by the production of an artificial immunity that they themselves did not become ill. They were not contacts to cases of diphtheria but were merely contacts to other carriers. In other words, we have here an epidemic of carriers made possible by the very device that was intended to protect the community from

diphtheria. Unwittingly these persons acted as the agents for the spread of the disease far more effectively than if they had not been protected. For, if they had not had active immunity induced, they undoubtedly would have developed clinical symptoms and would have been placed under quarantine restraint before there was the opportunity of producing as much damage as they did in this way.

These children carrying the diphtheria germs into various parts of the city gave rise to at least forty-eight additional cases. We have no way of telling how many of the other cases for which we have not been able to find a definite source might have likewise been associated with this same small group of carriers. Nothing in this argument should be taken as an incrimination of the value of diphtheria protection. The exact opposite is intended. It shows that there is still great need for immunizing a still higher percentage of all our children. It is safe to assume that the hazards for the individual, unprotected child are greater than they might have been without the protection being given to such a large percentage of other children. The unprotected child is now faced with an increased number of carriers among his associates.

The epidemic of carriers spread from the out-patient department of Hospital A to in-patients. There were comparatively few cases, however, as the result; one physician, one nurse, and not over four children was the entire toll.

A similar diphtheria carrier problem arose in Hospital B, but because of the difference in age of patients, type of case admitted, and the length of stay both in the hospital and in the out-patient department, different epidemiological manifestations were present and different control measures were instituted. The problem here was one of isolation of the positive case from the non-infected individual. This was accomplished by admitting all children into a quarantined area where they were kept until the culture report of nose, throat or abnormal discharge, or wound was received. If the report was negative they were assigned from the quarantined area to the appropriate ward or service of the hospital. If the report was positive they were removed to an isolation ward for further study and observation. If the case was determined to be

a true carrier, the child was then transferred to the city contagious hospital. In many instances it was found that there was but a single report of a positive culture. In certain of these the culture was found to be virulent. While this group of what might be termed transient virulent carriers is not large and the study of their immunization history is by no means complete, there are several leads that need to be followed. It was noted, for instance, that of ten such cases there were four who gave a history of previous diphtheria having taken place one or more years in the past. This, taken in connection with the fact that none of the persistent carriers gathered in the group from Hospital A had been reported as diphtheria cases in the past, may be of some significance. Different types of immunity may be induced by artificial and natural immunization methods.

The prevalence of positive cultures among the childhood patients admitted to Hospital B was at times alarmingly high. From July 10 to August 10 there were 233 children between the ages of six months and fourteen years, drawn from all parts of the city, admitted to this hospital. Twenty-one (9 per cent) were positive carriers of diphtheria organisms. During the following month there were 207 such admissions, of whom but six (3 per cent) were positive.

This carrier epidemic was not confined to these two hospitals and nothing in this discussion should be construed to in any manner be a criticism of the operation or management of either of the two hospitals studied. It was only through their splendid coöperation that the work and necessary control practices could be carried out.

The menace of the carrier spread involved also the private practice of medicine. One physician with an extensive mastoid practice who had been apprised of the situation as we had found it, immediately began culturing all abnormal discharges; not only once, but repeatedly. One of his patients, who had been under his care for approximately six weeks and who had had a series of negative cultures of nose, throat and mastoid, suddenly was found to have diphtheria bacilli in the discharge from the mastoid wound. This condition was reported to the Department of Health and one of the corps of special nurses assigned to study the case. We found in the course of our routine in-

vestigation that a twelve year old girl had acted as nursemaid for this mastoid patient for the preceding few days. On the day of our investigation this patient was reported by her private physician as having diphtheria which terminated fatally. The conclusion was drawn as a result of this investigation that this second child developed her diphtheria as the result of association with the carrier state of the mastoid wound. Instances of this sort have repeatedly occurred during the past year. When diligent search is made, over fifty per cent of the cases can be attributed to a definite source, over half of which we have classified as carriers.

Another point that has been most forcefully brought to our attention during the recent past is the relative lack of reliance that can be placed in the virulence test as a measure of the menace of a diphtheria carrier to the public. We shall cite but two instances to illustrate this point. The first is that of a nurse who had been on duty at the contagious disease hospital. This girl developed a diphtheria carrier condition which was particularly resistant. The organisms were at first demonstrated to be virulent as tested with a guinea pig. Her nose and throat were treated by various methods. At the end of six weeks her cultures were only occasionally positive; then they became non-virulent. The patient was discharged from the hospital, where she had been kept under isolation during this time. She returned to her home with her mother, who within one week developed a sore throat which six days later was diagnosed diphtheria. As a result of the delay the mother, after a few more days of illness, died of this condition. Three days following the death the nurse herself developed clinical diphtheria.

A second case is that of a boy who was transferred from a local hospital to the contagious disease hospital because of scarlet fever. During the course of this illness the child developed a positive Klebs-Loeffler's culture of both nose and throat. He had been actively immunized and did not develop diphtheria. He was kept in the contagious disease hospital for one month following his recovery from scarlet fever solely because of a persistently positive culture. Three successive negative cultures were then obtained and he was transferred to an orthopedic convalescent home in a nearby city. At this institution his culture was

found to once more be positive. This, however, was on two occasions reported to be nonvirulent. This condition persisted irregularly for over six weeks. No clinical cases developed in this convalescent home as all children in this institution had received active diphtheria protection and were known to have a negative Schick test. However, because of the possible hazard to the institution this child was returned to his home in Detroit. Within a few days after this his mother, whom he had not seen since the onset of his scarlet fever many months previously, developed diphtheria.

These are but two typical cases of many instances of the same sort. After protracted periods of observation and superficial treatment, carriers were found to have but irregularly positive cultures that were non-virulent, but when these same patients with their supposedly nonvirulent cultures were moved to an essentially new environment, where there were susceptible contacts, cases of diphtheria occurred. This sort of thing is not subject to definite statistical proof—it is always possible that the case developed as the result of exposure to some other source, but having happened so frequently we believe that the safer interpretation is that it is the result of reliance being falsely placed on a nonvirulent report from the laboratory.

SUMMARY

Each new weapon added to the armamentarium in the fight against diphtheria brings forth an array of new problems that have to be combated by extra precautions.

The immunization of large numbers of children seems to have increased the percentage of carriers.

This increase in carrier rate at times has amounted to epidemic proportions and the state is passed from individual to individual so that the source of a particular case is at times difficult to determine when this situation is not realized.

Mastoid wounds seem to offer a particularly good field for the development of the organism without clinical manifestations.

This conditions has been observed in both institutional and private practice cases.

The chronic carrier does not suddenly lose the diphtheria organisms but has periods of various lengths during which the field seems

to be free from this infection—only to have the condition recur in a dangerous way.

Absolute reliance cannot be placed on the nonvirulent culture as repeatedly individuals seem to have produced secondary cases after the report of a nonvirulent culture has been obtained.

The hazard for the *nonprotected* child

seems to have been increased, or at least not materially lessened, by the extensive use of active immunity-producing preparations.

Increased protection, involving a larger number of children, is essential. Individual risks for the unprotected child must increase in proportion to the number of positive carriers existing a community.

THE RELATION OF ROENTGENOLOGY TO OBSTETRICS AND GYNECOLOGY*

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The first attempt to demonstrate the foetal skeleton in utero by roentgenography was not encouraging. Although Levy-Dorn²⁵ recognized the foetal skull in a pregnant woman on an x-ray film in 1897 and Mullerheim²⁸ reported a similar observation in 1898, other obstetricians using exposures lasting about one hour and a half failed to obtain satisfactory results. As late as 1908 Bouchacourt⁴ stated that it was impossible to secure a roentgenogram of a living foetus. He believed if a skeletal shadow was obtained it was a sign of foetal death. However, in 1904 Albers-Schönberg² improved the technic so that more satisfactory roentgenograms of the foetal skeleton in utero were obtained. Subsequent advances and developments in x-ray apparatus such as the transformer, intensifying screens and the Bucky diaphragm have so improved the technic that at the present time we are able to obtain satisfactory demonstrations of the foetal skeleton from as early as the fifteenth week onwards. Exposures are now made lasting only a few seconds.

There seems to be a hesitancy on the part of the clinicians to subject their obstetrical patients to roentgenography for fear of injury resulting to the foetus, mother or both. This fear is based on the knowledge that therapeutic doses of x-rays have a deleterious effect on the offspring, sometimes resulting in physical or mental deformity and may produce sterility in the mother. However, this fear is unfounded when we are dealing with diagnostic doses, for the amount of x-ray used can in no way affect either, and it is accepted by all authorities as a harmless procedure. There is no record

throughout the entire literature of any injury to foetus or mother following the use of x-ray for purely diagnostic purposes.

This fear on the part of the profession is rather unfortunate, for roentgenography in obstetrics gives such accurate and definite information that it should be considered a necessity.

INDICATION OF USES

The primary function of x-raying the abdomen of a woman suspected of pregnancy is to demonstrate the foetus. True, the diagnosis of pregnancy can usually be made earlier by clinical methods but occasionally we need the x-ray to determine and establish the diagnosis beyond any shadow of doubt. This often occurs in cases of fibroids and ovarian cysts and pseudocyesis. The absence of foetal structures after the fourth month clearly makes the diagnosis that of some condition other than pregnancy. Stein⁴⁰ reports the following case: A fifteen year old girl was diagnosed as pregnant by the family physician. The family was so incensed that they threatened suit for defamation of character. The x-ray film demonstrating the foetal skeleton cooled their ire and they made the necessary provision for confinement. I had a similar case just a few months ago. A thirteen year old

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girl ceased to menstruate about seven months previous to her appearance, and she had a large tumor mass in the abdomen. She denied having sexual intercourse. Since no foetal heart tones could be heard, the physician's diagnosis was an ovarian cyst. X-ray clearly demonstrated a seven months old foetus. Similarly I have had cases in whom pregnancy was diagnosed and no foetal skeleton was found. These cases were proven on operation to be ovarian cysts.

AGE OF FOETUS DEMONSTRATED BY X-RAY

How early can the foetus be demonstrated? Until about ten years ago it was believed that the skeletal shadow could not be demonstrated until the sixth or seventh month. In 1921 Tousey⁴⁸ stated, "The foetal head shows well when it occupies the lower part of the uterus . . . but when it occupies the fundus the surrounding fluid produces so much dispersion as to make radiography unsatisfactory. The foetal bones are small and almost cartilaginous so that it is difficult to distinguish them in a radiograph." Recent publications report the demonstration of the foetus regularly after the fourteenth week and in some instances as early as the eighth or ninth week. In early pregnancy only some of the foetal bones are demonstrated. The ribs and vertebræ are usually first seen. I have demonstrated some ribs and vertebræ in a case twelve weeks pregnant.

Recently there has been some work on the demonstration of early pregnancy of the first or second month by the intra-uterine injection of lipiodol. Heuser¹⁶ reported his work in 1924 and Rucker and Whitehead³⁷ reported theirs in 1928. The diagnosis is based on the following signs: (1) relaxation of the uterine wall, (2) demonstration of the ovum, (3) closure of one tube and (4) failure to expel the oil. Personally I would be afraid to attempt this method for fear of producing abortion and the majority of roentgenologists are of the same opinion although the percentage of abortions reported to have resulted from the method is not higher than the general occurrence, which Williams estimates as one in five or six pregnancies. However, Rucker and Whitehead state that hystero-salpinography offers a means of making an early diagnosis of pregnancies which is especially valuable in such cases as tuberculosis in which a therapeutic abortion is indicated.

In 1921 Peterson³⁰ and later Stein and Arens⁴⁰ have been able to demonstrate what they believed to be signs of early pregnancy by means of trans-abdominal pneumoperitoneum examination. This consists of a broadening of the isthmus and globular enlargement of the fundus. Stein adds the enlargement of the broad ligament. Neither the method of utero-salpinography or pneumoperitoneum has met with universal acceptance by the roentgenologists and obstetricians.

POSITION AND PRESENTATION

In the later months of pregnancy radiography is of value in demonstrating the presentation and position of the foetus. In order to determine accurately this it is advisable to ray the patient in the prone, supine, and lateral positions. The relation of the spine and occiput of the foetus to the pelvis of the mother can readily be determined. Jarcho²⁰ has demonstrated cases of right occiput posterior, left occiput transverse, and face presentations. We have had frank breeches, single and double footing and hand presentations.

Stein reports the following case: A patient came into the hospital in her thirty-sixth week because of rupture of membranes. A roentgenogram showed a well flexed foetus in the right occipito-anterior position. Four days after the rupture of the membranes, the patient stated that the body was unusually active and she was having regular contractions. A film taken then showed a breech presentation. A spontaneous podalic version in a primipara three days after the rupture of the membranes is incredible but the incontrovertible radiographic proof is present.

The x-ray has also been of use in giving us more information as to the mechanism of labor.

DEMONSTRATION OF MULTIPLE PREGNANCIES, MONSTROSITIES AND ABDOMINAL PREGNANCIES

The diagnosis of multiple pregnancy by roentgenography is self evident and needs no further explanation other than to point out the fact that often it is advisable to confirm or disprove this diagnosis and to determine the presentation and position of the foetuses.

The recognition of foetal abnormalities

and monstrosities is greatly aided by x-ray examination as brought out by Dorland and Hubeny¹⁰ in their book. Often this is a life saving procedure as will be brought out by a discussion later of one of our cases. Such conditions as anencephaly, absence of vertebral bones and other changes can often be diagnosed in utero. Albano¹ reports a case of hydrocephalus in a breech presentation. Failure to diagnose this would have endangered the mother's life. Hydramnios and tumor masses can also be diagnosed. About seventeen cases of anencephalus diagnosed roentgenologically have been reported. The first was reported by Case⁷ in 1917.

The following is a case of ours at the Michael Reese Hospital which was not reported. A woman had been in labor for a number of days and it was decided to perform a cesarean section. Before the operation she was sent to the Radiological Department for examination. The purpose of this examination was evidently not clear to the surgeons as she was taken directly to the operating room before the films were developed. On examining the wet films Dr. Arens noticed an absence of the cranial vault although the face was clearly demonstrated. He rushed up to the operating room in time to prevent the operation. The patient was finally delivered by craniotomy.

Ovarian and abdominal pregnancies have been demonstrated by roentgenograms. In 1926, we reported a case of abdominal pregnancy by x-ray.³ The films of the abdomen disclosed the presence of the entire foetal structure, which lay in the right iliac fossa instead of the pelvis. Because of this appearance we diagnosed an abdominal pregnancy. On opening the abdomen an almost black amniotic sac was seen lying freely in the abdominal cavity. A macerated and partly desiccated foetus measuring 26 cm. was extracted. The placenta was adherent to the right border of the urinary bladder, the anterior and right lateral walls of the pelvis and the right broad ligament. The right tube and ovary were imbedded in the mass. The tube showed no evidence of pregnancy reaction or site of perforation on microscopic study.

INTRAUTERINE FOETAL DEATH

Recently there has been considerable mention of the roentgenographic diagnosis of intrauterine foetal deaths. In 1922 Spaul-

ding³⁹ and Horner¹⁸ independently reported cases of foetal death and described the pathognomonic signs. These findings were later confirmed by Greenhill,¹³ Doub,¹¹ Moss,²⁷ Portes and Blanche,³³ Bourland and Spangler.⁵ All the authors reported the findings in only a few cases. The signs are listed as: over-riding of the skull bone with cephalic asymmetry and acute angulation of the spine. Kehrer²³ stated that there were a number of x-ray signs of foetal death. If several of these are present they constitute conclusive evidence. These are as follows: (1) Super-position of flat cranial bones, (2) Shriveling of the cranial content, (3) Occipital prolongation of the head in the shape of an isosceles triangle, and (4) The sharp angular bending of the vertebral column in the form of kyphosis, lordosis, or scoliosis. Other signs less conclusive are asymmetry of the cranium, flattening of the biparietal vault of the cranium, and displacement of the back and face of the foetus away from the center of the uterus towards the wall of the uterus with simultaneous deflection of the spinal column.

In 1926 Stein and Arens⁴¹ published their work which was based on an exhaustive study of a large number of patients. They found the so-called evidence of foetal death in patients who delivered normal infants, and the absence of signs in many cases of dead foetuses. On one occasion, one of the above mentioned writers, who described the signs of foetal death, visited the Michael Reese Hospital and was shown the films without being told the subsequent history. He made the wrong diagnosis in a goodly percentage of cases. Stein and Arens came to the conclusion that the x-ray signs of intrauterine foetal death without clinical history were of no value.

PELVIMETRY AND CEPHALOMETRY

A review of the obstetrical literature as related to roentgenology reveals a number of articles devoted to radiographic pelvimetry and foetal cephalometry. Practically all methods advocated are some form of modification of the procedure proposed by Thoms.⁴⁶ Jarcho²¹ first locates two external landmarks, namely, (1) the upper and anterior border of the symphysis pubis and (2) the interspace between the fourth and fifth lumbar vertebræ. He has the patient sit on the Bucky table instead of re-

clining in the semi-recumbent position so that the plane of the inlet is parallel with the film. The target of the tube is 90 cm. from the film and 5 cm. behind the symphysis. He varies his exposure from 20 to 35 seconds, using 85 K V and 25 Ma. He then replaces the patient with the perforated lead sheet and takes a second exposure on the same film, reading off the exposed dots on the developed negative just as Thoms does. He follows this film with one taken the same way but with the patient in the lateral position. In foetal cephalometry, the rays are centered directly at mid-point between the sinciput and occiput, which are located by external palpation. The rest of the procedure is the same.

Walton⁴⁹ makes use of a false centimeter chart. This chart is obtained by making a series of exposures of a perforated lead plate at various film distances from 1 cm. to 30 cm.; the tube distance being always 30 inches. Having once obtained this chart the use of the lead plate is no longer necessary. He measures the distance from the external landmarks to the film and can then read off the exact measurements on the chart. The advantages claimed by him are: (1) Its accuracy in determining the size of the maternal pelvic inlet and foetal head before delivery, (2) its simplicity, as no special or complicated apparatus is required, (3) all preliminary work can be done by the technician, (4) it takes very little time to compute the measurement after the films are ready for examination. Rowden³⁴ also describes a method of radiographic pelvimetry which is a modification of the Thoms procedure.

Thoms⁴⁷ discussed the diagnosis of disproportion. It depends upon the pelvic and cephalic measurement and also on the consideration of the mother's stature, gait and physical characteristics and history of previous labors.

GYNECOLOGY

Although the earliest work on the application of roentgenology to gynecology was recorded in 1914, most of the important contributions have appeared in the last decade. However, the roentgenological examination of the female pelvis has passed the experimental stage and few gynecologists can afford to be without this aid. In 1914, Cary⁶ and Dartigues and Dimier⁹ indepen-

dently tried to demonstrate the pelvic organs by injecting collargol but because of the peritoneal irritation this had to be discontinued.

In 1919 Steward and Stein⁴⁵ introduced trans-abdominal pneumoperitoneum as a means of demonstrating the pelvic organs. In 1920 Rubin³⁵ reported his result of successful diagnosis of patency by trans-uterine pneumoperitoneum and this procedure was soon adopted to show the pelvic viscera, particularly by Peterson.³¹ In 1925 Stein and Arens⁴² published their results from the Michael Reese Hospital after having worked on the problem for about three years. Numerous conditions were demonstrated, the true nature of which was not readily apparent on bimanual examination.

In 1923 gynecologists and roentgenologists again began searching for an opaque medium with which to visualize roentgenographically the interior of the uterine cavity. Kennedy²² used 20 per cent sodium bromide. In 1925 Williams and Reynolds⁵¹ used an emulsion of barium and bismuth. Most of these substances produced peritoneal irritation and the method was not readily accepted. In 1921 Sicard and Forestier³⁸ reported the use of Lafay's lipiodol for roentgenological demonstration of various body cavities and it was used for gynecological examinations by Heuser¹⁶ in 1921 and reported in 1924. In 1926 we began using the combined method of pneumoperitoneum and utero-salpinography at the Michael Reese Hospital.⁴³ We found that this gave us the best results as we visualized not only the interior of the tubes and uterus but the peritoneal appearance of the pelvic organs. Stein stated that even the best bimanual and physical examination leads to unnecessary exploratory laparotomies. By the use of the combined method all the viscera are visualized, adhesions demonstrated and the patency of the tubes determined.

TECHNIC

Practically all examiners use lipiodol in preference to other substances as it is the most opaque to the rays and still innocuous. Most of the ill effects of hystero-salpingography (five deaths and thirteen cases with infection in 3,000 examinations—Gauss¹²) have been with substances other than lipiodol. It should be used immediately after

opening the package as it turns brown on standing probably due to liberation of free iodine. The surplus is discarded. The patient is prepared in the usual gynecological procedure and placed in the lithotomy position on a Bucky table. Strict asepsis is followed. A special speculum is inserted. The vagina and cervix are swabbed with iodine or mercurochrome and the cervix grasped with a vulsellum and a special cannula with an olive guard is inserted in the os. About 10 cm. of oil is injected but no undue pressure is applied to the syringe. Stereoscopic prone and lateral views are taken immediately after the injection and a film is taken twenty-four hours later to see if there has been a peritoneal spill. I prefer to give the patient 1/75 gr. of atropine one-half hour before the examination to relieve any spasm that may be present.

For the combined method the procedure is slightly different. The patient is placed on a G. U. table or, as Stein and Arens⁴⁴ propose, a specially built table. If the tubes are patent 1,000 c.c. of CO₂ is injected into the uterus, which is followed by the oil. If the tubes are not patent, the gas is introduced trans-abdominally by means of a spinal puncture needle, the oil injected into the uterus as described above, the patient is turned on her abdomen and placed in reversed Trendelenburg position, and the films exposed. The resultant radiographs reveal the contour of the uterine cavity and tubes and the presence or absence of ovarian cysts, subserous fibroids, tubo-ovarian tumors, adhesions and other changes.

CONTRA-INDICATIONS

The contra-indications are:

1. *Pregnancy.* Although Heuser¹⁶ contended in 1925 that the injection of lipiodol does not produce abortion, recent writers have reported this result with increasing frequency.

2. *Malignancy.* Utero-salpingography has been used to demonstrate the presence of malignant growths in the uterine cavity. There is danger of spreading the cells of the new growth throughout the system. This danger is quite apparent when the few cases of accidental injection of the tubo-ovarian system are encountered. We have had one such case at the North End Clinic in whom fortunately there was no malignancy or acute infection. In the ordinary case no

ill effects result but one can readily realize the possibility of forcing some malignant cells through the vessels.

3. *Time.* One should inject the oil only between menses, as shortly before or after the period the swollen endometrium may prevent the media from passing the uterine ossia of the tubes. Bèclère²⁴ and a few other authors noted a reactivation of an old pelvic infection which they believed was due to injecting oil too near the menstrual period.

4. Gonorrhea and acute pelvic inflammatory conditions are contra-indications for the use of utero-salpingography because of the danger of spreading infection, although many writers such as Cotte and Bertrand,⁸ Henkel¹⁵ and Jaroschka¹⁹ report that they have seen no ill effects in this type of patient.

POSSIBILITY OF PERITONEAL IRRITATION

The consensus of opinion among the gynecologists and roentgenologists is that no irritation results from the use of lipiodol although there are a few men such as Rubin and Bendick,³⁶ Odenthal²⁹ and Haselhort¹⁴ who have seen such reactions. I have never seen any harm resulting from this procedure. Usually, the oil is absorbed in a few weeks. In one case I was able to see the oil seventeen months later without any ill effects.

USE OF HYSTERO-SALPINGOGRAPHY

The uses of this procedure are first and foremost the demonstration of tubal patency. It is possible to determine if one or both tubes are patent, provided the element of spasm is removed, and the site of the obstruction. We can also demonstrate certain tumors of the uterus such as submucous fibroids and polyps.

Developmental anomalies can be demonstrated. These may consist of infantile uteri, arcuate or bicornate uteri, double uteri and changes in position such as retro- or anteversion or flexion. Changes in size and shape can also be determined.

Stein and Arens and also Mathieu²⁶ described the appearance of the roentgenogram in hydrosalpinx. Watkins and Menne⁵⁰ performed an interesting experiment as to the location of the site of occlusion of the lumen of the Fallopian tube. Salpingography may also be used to deter-

mine the results of operation for the restoration of tubal patency.

ROENTGEN THERAPY IN RELATION TO GYNECOLOGY

The uses of high voltage, filtered rays and radium in malignant gynecological conditions is well known to all and need no further mention. So, also, is radiation in benign fibromata of the uterus and in benign hemorrhages.

More recently other types of gynecological conditions have been attacked by radiation therapy.

PELVIC INFLAMMATORY CONDITIONS

The late Dr. Polak,³² among others, recently advocated the use of roentgen rays in treating pelvic inflammatory conditions. It is based on the premises that the recurrent cycle of menstruation inhibits the pelvic organs from healing after they have become infected. The purpose is to produce a temporary castration so that the patient is amenorrheic for several months and that the rest thus produced will aid in healing inflammatory conditions. They have noted some very good results. We have tried it at the North End Clinic but found that the output of our machine (125 KVP) was evidently not sufficient to produce a temporary sterility.

OVARIAN AND HYPOPHYSEAL HYPOFUNCTION

During the last six years there has been some work in Europe and this country on the subject of regulating the menses in cases of ovarian and hypophyseal dysfunction. Small doses are given over the pituitary and over the ovaries. The principle is to stimulate the action of the cells of these glands. Of course accurate diagnosis is essential and the cases must be carefully selected. Hirsch¹⁷ studied thirty-eight cases. In twenty-five patients menstruation appeared after the treatment. In four cases this appeared seven weeks after the treatment. In some cases dysmenorrheic symptoms disappeared after the menstrual regulation. Eight of these cases became pregnant. In thirteen cases he failed to obtain results. He concluded that a certain x-ray dosage in carefully selected cases is capable of producing improvement in ovarian function as shown by regulation of the menstruation and the induction of pregnancy with

the birth of healthy children. He believes that nothing is lost by trying this treatment.

CONCLUSIONS

Roentgenology is an indispensable aid to obstetrics and gynecology for demonstrating pregnancy, various types of foetal anomalies, and various changes in the pelvic organs. Roentgen rays are also used therapeutically, 1052 Maccabees Building.

BIBLIOGRAPHY

1. Albano, G.: *Zentralbl. für Gynäk.*, 51:2793, 1927.
2. Albers-Schoenberg: *Zentralbl. f. Gynäk.*, 28:1514, 1904.
3. Arens, R. A., and Bloom, A. R.: *Radiology*, 7:65 (July), 1926.
4. Bouchacourt, L.: *J. de Med. et Chir. Prat.*, 98:469, 1927.
5. Bourland, J. W., and Spangler, D.: *Texas State Jour. Med.*, 20:560, 1925.
6. Cary, W. H.: *Am. Jour. Obstet.*, 69:452, 1914.
7. Case, J. T.: *Surg., Gynec. and Obst.*, 24:312, 1917.
8. Cotte, G., and Bertrand, P.: *Gynec. et Obstet.*, 14:81, 1926.
9. Dartigues and Dimier: *Paris, Chirurg.*, 8:400, 1916.
10. Dorland, W. A., and Hubeny, M. J.: *The X-ray in Embryology and Obstetrics*. Saint Paul, Minn.: Bruce Publishing Co., 1926.
11. Doub, H. P.: *Am. Jour. Roent. and Rad. Therapy*, 14:39, 1925.
12. Gauss: *Zentralbl. f. Gynäk.*, 52:2898, 1927.
13. Greenhill, J. P.: *Med. Clin. of N. A.*, 7:611, 1923.
14. Haselhort, G.: *Zentralbl. f. Gynäk.*, 51:1821, 1927.
15. Henkel: *Ztsche. f. Gebrulsh in Gynäk.*, Sonderabdruck, 91, 1927.
16. Heuser, C.: *Rev. Assoc. Med. Argen.*, 37:574, 1924.
17. Hirsch, I. S.: *Surg., Gynec. & Obstet.*, 43:659, 1926.
18. Horner, D. A.: *Surg., Gynec. and Obst.*, 35:67, 1922.
19. Jaroschka, K.: *Zentralbl. für Gynäk.*, 51:1097, 1927.
20. Jarcho, J.: *Amer. Jour. Surg.*, 12:417 (June), 1931.
21. Jarcho, J.: *Amer. Jour. of Surg.*, 14:419, 1931.
22. Kennedy, W. T.: *Am. Jour. Obstet. and Gynec.*, 6:12, 1925.
23. Kehrner: *Zentralbl. für Gynäk.*, 55:2530, 1931.
24. Lecene, Tedeseo, and Bécélère: *Bull. Soc. Obst. et de Gynec.*, 18:248, 1927.
25. Levy-Dorn, M.: *Deutsche Med. Wchnschr.*, 23:800, 1897.
26. Mathieu, A.: *Calif. and West. Med.*, 35:73, 1931.
27. Moss, M. N.: *Minn. Med.*, 7:586 (Sept.), 1924.
28. Müllerheim, R.: *Deutsche Med. Wchnschr.*, 24:619, 1898.
29. Odenthal, W.: *Zentralbl. f. Gynäk.*, 51:1824, 1927.
30. Peterson, R.: *Surg., Gynec. and Obstet.*, 33:154, 1921.
31. Peterson, R.: *Am. Jour. Obstet.*, 2:349, 1921.
32. Polak, J.: *Amer. Jour. of Obstet. & Gynec.*, 18:580, 1929.
33. Portes and Blanche: *Gynec. et Obst.*, 10:333, 1924.
34. Rowden: *Brit. Jour. of Rad.*, 4:432, 1931.
35. Rubin, I. C.: *Jour. Am. Med. Assoc.*, 74:1017, 1920.
36. Rubin, I. C., and Bendick, A. J.: *Amer. Jour. Roentg. and Rad. Ther.*, 19:348, 1928.
37. Rucker, M. P., and Whitehead, L. J.: *Jour. Mich. State Med. Soc.*, 27:559, 1928.
38. Sicard, J. A., and Forestier, J.: *Rev. Neurol.*, 28:1264, 1921.
39. Spaulding, A. B.: *Surg., Gynec. and Obst.*, 34:754, 1922.
40. Stein, I. F., and Arens, R. A.: *Jour. A. M. A.*, 81:4 (July 7), 1923.
41. Stein, I. F., and Arens, R. A.: *Radiology*, 7:227 (Sept.), 1926.
42. Stein, I. F., and Arens, R. A.: *Radiol.*, 7:326 (Oct.), 1926.
43. Stein, I. F., and Arens, R. A.: *Jour. A. M. A.*, 87:1299 (Oct. 16), 1926.
44. Stein, I. F., and Arens, R. A.: *Radiology*, 12:341 (April), 1929.
45. Stewart, W. H., and Stein, K.: *Am. Jour. Roent. and Rad. Ther.*, 6:533, 1919.
46. Thoms, H.: *Jour. A. M. A.*, 92:1515, 1929.
47. Thoms, H.: *Surg., Gynec. and Obstet.*, 52:936, 1931.
48. Tousey: *Medical Electricity and Roentgen Rays*. Philadelphia: W. B. Saunders Co., 1921, p. 1067.
49. Walton, H. J.: *Surg., Gynec. and Obstet.*, 53:536, 1931.
50. Watkins, R. E., and Menne, F. R.: *Jour. A. M. A.*, 95:1647, 1930.
51. Williams, E., and Reynolds, R. A.: *Brit. Med. Jour.*, 1:691, 1925.

AN ADULT HEALTH EDUCATION PROGRAM IN WASHTENAW COUNTY

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There is a growing tendency for County Medical Societies to assume a certain amount of responsibility for public health efforts in their respective communities. The potential advantages for this arrangement from the standpoint of monetary cost and efficiency are evident. However, it is also admitted that there are arguments against a development of this sort.

Be that as it may, it is pretty certain that an essentially rural adult health education program such as is to be described could only have been carried out by the local Medical Society in coöperation with certain other local agencies.

Approximately a year ago the health education committee of the Washtenaw County Medical Society faced the problem of putting on an educational program with no funds for the purpose and no well-defined scheme of action.

Contact was made with the University Extension Division, who very kindly agreed to pay telephone bills, postage, and traveling expenses incidental to our proposed program.

In order that the various organizations and individuals concerned with this program might have a voice in our plans it was agreed that a larger committee be formed. This committee consisted of a representative of the University Extension Division, the chairman of the Health Education Committee of the Washtenaw County Medical Society, the County Commissioner of Schools, the County Nurse, and a former member of the Health Committee of the Washtenaw County Federation of Women's Clubs who had been making some arrangements for health lectures in the county during the previous year. Future developments will probably indicate that others be asked to join this committee.

A list of suggested titles for health lectures was sent to members of the County Medical Society by the Health Education Committee. The members were asked to state whether they would give their services in this educational program and, if so, to designate the topics they preferred or to list

any other topics of their own choice. A final list of titles was then compiled, mimeographed and copies prepared for distribution. The list of suggested topics for lectures with the frequency that each was selected by those making requests for lectures follows:

TITLES MOST SUITABLE FOR CHILDREN'S AUDIENCES

1. First Aid (Included in the list below)	
2. Open Wider Please (Defective Teeth) (Included in list below)	
3. Why Think about Eating? (Included in list below)	
4. Trudeau and the Battle with Tuberculosis....	0
5. Edward Jenner, the Conqueror of Smallpox....	0
6. Pasteur, Discoverer of a World of Microbes....	5
7. What Did You Say? (Preservation of Hearing) (See list below)	
8. Why Wear Glasses? (See list below)	
9. Cover Up That Sneeze! (Colds) (See list below)	
10. Cosmetics	0
11. Health and Safety.....	1
12. Health in the Schoolroom.....	1
13. Principles of Healthy Living.....	3

TITLES FOR ADULT AUDIENCES PARTICULARLY

1. Conquering Tuberculosis	6
2. First Aid	28
3. Why Think about Eating? (Nutrition).....	0
4. Dental Facts and Fancies.....	1
5. Health Problems on the Farm.....	1
6. Training the Toddler (Habits of Children)....	0
7. Should Johnny Be Spanked? (Behavior Problems)	2
8. How to Organize for Public Health Work.....	1
9. How Shall I Preserve My Hearing?	
10. How Shall I Preserve My Vision? Requests made for "Eye, Ear, Nose and Throat Conditions"	3
11. The Truth about Nerves and Nervousness.....	1
12. What Shall I Teach My Child about Sex? (Social Hygiene)	19
13. The Heart and Its Handicaps.....	2
14. Cover Up that Sneeze!.....	3
15. A Sound Mind in a Sound Body (Mental Hygiene)	3

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16. Care of Sick in Home.....	1
17. What Parents Should Know About Their Children	15
18. Contagious Disease Control.....	6
19. What Science Knows about Cancer.....	1
20. Light, Heat, and Ventilation.....	1
21. The Use and Abuse of Drugs.....	0
22. John Barleycorn Destroys Good Health.....	0

An examination of the list of titles will show that they cover many aspects of the field of health and perhaps no particular objective seems outstanding. A plan of general health education was adopted because no reliable statistics are available of the morbidity and mortality rates in Washtenaw County which would indicate where effort should be concentrated. Further, the county board of supervisors' policy with regard to health matters in the past has diverged rather widely from the policy which would have been adopted by a more health conscious group. In the opinion of some, attitudes have arisen out of past situations which seem to indicate that one should not antagonize by saying too much about the building up of a desirable organization or machinery needed to combat certain problems, but rather to form a groundwork of general information and desirable attitudes which would serve as a basis for future efforts. However, close coöperation with the County Nurse frequently brought to light outstanding health problems in certain communities, which information was used to advantage by the speaker going into that territory.

Although topics appropriate for talks to children were suggested, only requests for lectures to adults were received.

The high incidence of social hygiene lectures may be explained by the fact that a series of fourteen were requested by a women's organization. Undoubtedly the most popular topics were "First Aid" and "What Parents Should Know about Their Children." We are aware of the fact, however, that frequently the choices made were influenced by those doing the work of organization.

The work of organization in the rural community itself was carried out through the combined efforts of Mrs. T. S. Weber, the former health committee member of the Washtenaw County Federation of Women's Clubs, the County Nurse, and the County Commissioner of Schools. When one of these three people entered a school district,

they carried with them copies of the mimeographed list of topics. Contact was made with the local school teacher or members of the district school board in the rural area. If everyone concerned was agreed, a request was made for a lecture and a choice of topic made. This request was sent to the chairman of the Health Education Committee of the Medical Society, who made arrangements for all the lectures. Later in the year, the County Parent-Teachers Association began to facilitate the work of organization by bringing in requests for health lectures for meetings of Parent-Teachers organizations throughout the County.

The people of the district or organization concerned coöperated by making arrangements for publicity and adding such features to their program as they might desire. This might include entertainment by the children of the school, music, refreshments, etc.

After having completed arrangements for a given lecture the chairman of the Health Education Committee of the County Medical Society sent a letter to the key person in the community where the lecture was to be given, introducing the speaker and asking that a report be made of the meeting after it was over. Also, attention was again directed to the fact that future lectures were available by sending requests directly to the chairman of the Health Education Committee, or to one of those people doing organization work in the field.

An attempt was made to send physicians to fill requests coming from their own communities, and, as far as possible, to permit physicians to speak on topics related to their specialties or fields of special interest. As might be expected, the chairman of the Health Education Committee was obliged to do some pinch-hitting occasionally.

In some cases physicians provided their own means of transportation. Where this was not practical, members of the Kiwanis Clubs of Ann Arbor and Ypsilanti provided means of conveyance.

The meetings were held in rural schools as a rule, though speakers were also provided for Grange meetings, Farmers Clubs, Women's Clubs and other organizations. The meetings tended to be informal, and opportunity was usually given at the close of the talk for questions. In some cases talks were illustrated with stereopticon slides

usually provided by the Extension Division. Physicians found suggested outlines for lectures provided by the Extension Division of benefit.

Up to the present time one hundred and four talks have been given by thirty-eight different speakers. There has been a total attendance of four thousand five hundred and three, with an average attendance of forty-four. A large number of lectures arranged for were cancelled because of weather conditions or because C. W. A. activities in schools did not permit meetings to be held there.

Regarding the cost of this program, it might be said that the chief item of expense was the total car mileage of 1,270 miles paid Mrs. Weber for making visits to 93 of the 130 schools in the county. Fifteen days were required to complete these visits. The incidental expenses of postage, telephone bills, etc., probably amounted to less than five dollars.

It is perhaps difficult or even impossible to measure the results of a program of this sort. One might quote extracts from letters

of appreciation received from individuals who have heard these lectures. One might tell of occasional instances where first aid or other information secured through these lectures has been the means of saving life or limb. Also one might tell of hours spent by certain physicians in answering eager questions asked by members of enthusiastic audiences at the close of lectures given. The most far-reaching results, however, will probably be manifested in changed behavior and attitudes.

We believe that programs of this sort are essential to the future progress of the public health movement. § We have passed through the period where environmental sanitation was stressed, also the period of marked advances in the control of communicable diseases, and now future progress is largely dependent on the coöperation of the individual, which can only be secured through health education, which it is safe to prophesy will be the dominant force in the public health of tomorrow.

§Galdston, Iago: Health Education and the Public Health of the Future. *Jour. Mich. State Med. Soc.*, 28: 32-35 (January), 1929.

THE TREATMENT OF IMPETIGO CONTAGIOSA NEONATORUM*

THE "DRY METHOD"

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Sporadic cases of impetigo contagiosa continue to appear between recurring epidemics in most obstetrical institutions despite rigorous precautions.

Swendson and Seymour,¹ following the work of Rood Taylor,² have emphasized the conditions which predispose to infection of the vulnerable skin of the infant. The delicate skin of the newborn is easily injured by energetic bathing with harsh wash-cloths. In addition, excessive warmth due to over-heated rooms or excessive clothes induce perspiration, which facilitates bacterial growth in addition to causing maceration of the skin of the infant. The method in common use, of oiling the skin of the infant daily, is undoubtedly an important factor in preventing loss of moisture. This increases the tendency to microscopic maceration of the skin with invasion of the denuded surface by the

causative organisms of impetigo.

In treatment, these factors should therefore be considered. The use of oily or greasy preparations, useful as they are for impetigo of older children and adults, have been generally disappointing for impetigo of the new born. These preparations tend to spread the infection, as the natural tendency of oily substances is to disseminate over a wide area. In addition, the further maceration of the adjoining skin opens new portals of entry for the infection. With

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these considerations in view, the following routine treatment for impetigo of the newborn has been carried out in forty-four consecutive cases. It has been successful in clearing up these cases in seventy-two hours or less, the average duration being forty-eight hours after institution of this therapy.

Treatment.—All mature lesions are opened once or twice a day and the infant immediately immersed for ten to fifteen minutes in a bath of 1-15000 bichloride of mercury and a thorough soap bath given, using a mild castile soap. The following dusting powder (modified from Rood Taylor) should be applied freely following the bath:

Bismuth subnitrate,
Zinc Oxide light,
Calomel; equal parts.

New lesions are opened twice a day and the bath repeated. After the first day only an occasional lesion appears and only one bichloride bath is usually necessary. The bath

should be continued for a few days after the last lesion appears. The dusting powder is applied freely, during this period, to the affected parts. Elsewhere, talcum powder freely applied two or three times a day, paying special attention to all folds and creases of the skin, such as the neck and groin. Should it be necessary to apply external heat to the infant, this is best done by a light tent rather than excessive clothing of the baby.

The only disadvantage noted in the treatment of impetigo, by the above method, has been one infant in the series who developed a bichloride dermatitis. Such a result could be avoided by discontinuing the bichloride baths as soon as the first sign of erythema appears, which did not occur in this case until a few days after treatment was begun.

BIBLIOGRAPHY

1. Swendson, James J., and Seymour, R. Lee: *J. Amer. Med. Assoc.*, 96:2081, 1931.
2. Taylor, Rood: *Amer. Jour. Dis. Chil.*, 38:439, 1922.

PAPILLOMATA OF THE LARYNX WITH CASE REPORTS

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The persistent tendency of laryngeal papillomata to recur has prompted the introduction of a multiplicity of methods of treatment. To evaluate properly the merits of each method, the ultimate results must be studied. Not so many years ago extremely radical procedures, like thyrotomy, electrocauterization, fulguration and radium application, have been employed—and now discarded—in the attempt to combat the frequent recurrence of the papillomata. A suggestion is offered to regard this condition as extremely obstinate to treatment and requiring many months of observation, of patient study and of perseverance in a conservative method of treatment.

Two features of papillomata of the larynx mark them as something more than just benign growths. The small masses crowding the diminutive larynx of a child form a mechanical obstruction to respiration which is alarming. Again, the transmissibility of the growth from one site to another clinically stamps the disease as relatively malignant.⁴

Recurrence of papillomata in children is

invariably the rule even after the most painstaking and thorough removal. The method of choice, therefore, in their eradication must be such as to best preserve the delicate functions of the larynx and ultimately to give the patient a clear voice. It must be a method which can be repeated without too much shock to the little patient. Surgical avulsion of the growths without injury to the underlying laryngeal tissue is the method of choice. The list of methods tried topically is endless, and recently the internal administration of magnesium oxide has been revived³ since its first introduction by Clauoué in 1911.

I would like to cite two reports with

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emphasize the importance of conservative measures and patient observation.

Case 1.—V. B., aged two years and two months. Mother says her daughter cannot cry audibly and will not speak because of a very hoarse voice. In September, 1928, numerous papillomata were extracted from the larynx. For six months the voice was clear; then hoarseness ensued again. In April, 1929, the growths were again removed by direct laryngoscopy, and a month later the recrudescence necessitated another operation.

Only a short period of relief was obtained and the patient became dyspneic for the first time: this was in June, 1929. Examination of the larynx disclosed the numerous papillomata crowding and overlying all the landmarks. A tracheotomy was performed, but the papillomata were not touched. The child had lost weight and suffered a set-back physically the last few months and attention was now centered upon improving her.

Close observation of the patient was maintained for over two years, and it was gratifying to see the papillomata shrivel away due to the improved physical condition and the physiologic rest of the larynx. Gradual decanulation was begun and in December, 1931, the tracheotomy tube was removed entirely.

Two more years have now elapsed. The patient possesses a clear voice, is in vigorous health and is able to maintain her standing in school with other children of her age.

Case 2.—C. D., aged two years. Since the age of seven months the patient had been treated for colds and hoarseness. Cough sedatives improved his condition but his sleep has always been very restive and fitful. Recently his dyspnea has become more severe.

On physical examination the child appeared extremely pale and emaciated with an excited facies. When resting the dyspnea was noted to be mostly inspiratory but definitely labored. Upon crying, the voice was hoarse, in a few seconds a laryngeal spasm would occur, the child holding its mouth open widely, but no inspiration occurred. Soon this exciting phase resulted in complete relaxation of the entire body, when respiration would again be resumed with the release of the laryngeal spasm.

Direct laryngoscopic examination was performed and papillomata were seen scattered over the entire larynx, the cords, the ary-epiglottic folds, and the epiglottis. No further operative procedure on the larynx was contemplated until the general physical condition of the patient improved. Magnesium oxide was ordered daily, in ascending doses.

Unobstructed breathing was obtained by performing a tracheotomy under local anesthesia. This was on June 19, 1932.

Over a period of one year, several direct laryngoscopic examinations (no surgery) were made, but there seemed to be no change in the growths obstructing the larynx. However, neither was there an increase in size nor did new growths spring up in previously unaffected areas. In the meantime, the child doubled in weight; its color returned. The breathing through the tracheotomy tube was free during rest and play. No further reliance was placed on the magnesium oxide and surgical extraction of the papillomata was instituted.

Summing up the facts about the different methods of treatment of papillomata of the larynx in children, it must be noted that rest to the larynx is important as exemplified in Case 1. The only external laryngeal operation practiced was tracheotomy, and then only when the dyspnea necessitated it.

An opportunity of examining three patients where careful electrocoagulation was used in destroying the growths revealed such extensive stenosis that a tracheotomy tube will have to be worn permanently. This method is not recommended.

No therapeutic importance could be attributed to the use of magnesium oxide (Case 2), although several encouraging results have been reported by others.

Direct application of radium has not been beneficial; on the contrary, severe edema, perichondritis and necrosis have followed.²

Repeated removal of papillomata after preliminary tracheotomy, if necessary, together with attention to the general physical condition and needs of the patient, offer the most promising results.

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BIBLIOGRAPHY

1. Claué, R. *Ann. Des Maladies de l'Oreille*, 36:11, 1911.
2. Clerf, Louis H. *Transactions of the American Academy of Ophthalmology and Otolaryngology*, 1932. Page 335.
3. Katz, Benjamin: Treatment of papillomas of the larynx with calcined magnesia. *Ann. Ot., Rhin. and Laryng.*, page 202 (March), 1932.
4. Thomson, Sir St. Clair: *Diseases of the Nose and Throat*, Second Edition. London: Cassell and Company, Ltd., 1921. Page 520.

THE ENDURING ACHIEVEMENTS OF SIR CHARLES BELL

HENRY W. WOLTMAN, Rochester, Minn., in discussing the life and work of Charles Bell, states that it was not only Bell's determined wish to carry forward the work of the Munros and the Hunters but that he felt that it was also his duty, and that he not only toiled industriously but with an all-consuming passion. Like the other Scots of London he achieved fame, and he shared their traits. The

author presents the salient points, as he sees them, from Bell's "Idea of a New Anatomy of the Brain." Herein Bell anticipates the later discoveries of cerebral localization. He states clearly what is now referred to as "the doctrine of specific nerve energies." The author discusses further Bell's various achievements in the physiology of the nerve system: Bell's palsy, external respiratory nerve sign, muscle sense and Bell as teacher and clinician.—*Jour. A. M. A.*, Aug. 18, 1934.

THE JOURNAL

OF THE

Michigan State Medical Society

PUBLICATION COMMITTEE

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OCTOBER, 1934

EDITORIAL

AN EDITOR ERRS

In the August number of the *Illinois Medical Journal* there appears a rather vituperative editorial whose theme is the report of the Committee on Economics of the Michigan State Medical Society. The brunt of the attack is directed against Dr. Nathan Sinai, director of study, and spreads out into an attack on the Michigan State Medical Society and the University of Michigan.

Rather mildly we might call attention to the breach of ethics involved in one unit of organized medicine making, through its official publication, such an unwarranted attack on another unit, especially at a time when organized medicine should pull together. More emphatically Michigan resents the report of the Committee on Economics being styled "Sinai's Health Scheme." It resents for Mr. Sinai the suggestion that he is controlled by the Milbank Fund, and that somehow he has managed to insinuate himself into a position of control of not only the Medical Economics Committee, but the Michigan State Medical Society. The acceptance of this as a fact, or as even a partial fact, would place the members of the Economics Committee in the position of being either mentally incompetent or figureheads and the House of Delegates as acquiescent. The Committee on Economics unquestionably represents as high a

grade of mentality as is to be found in the Michigan profession or in that of any other state. Naturally they required a director of study but at all times The Committee dominated the situation.

We do not at all object to a criticism of the plan. It would be equally proper to question the basic facts as presented, certain though we are that they can be substantiated. The editor of the *Illinois Medical Journal* should know that the plan as presented has not been accepted by the Michigan State Medical Society. It is being presented to the House of Delegates as this JOURNAL goes to press. There is a difference of opinion among the profession of Michigan as to the advisability of placing this plan in operation. There is a question in the minds of some of us as to whether the plan is practical, but the point is that, with great sincerity and with the free expenditure of society funds, Michigan has attempted to do a bit of constructive work. The evidence is conclusive that Michigan has had the vision to foresee coming events. We would wish that other states might do a similar bit of research if only to serve as controls of Michigan's results.

There is an old adage that people in glass houses should not throw stones. Michigan is proud of the cleanliness of its profession. We are pleased that we remain singularly free from the type of medical practice which is prevalent in states which, like Michigan, have a large center of population. Rank commercialism by groups and individuals with exploitation through the newspapers is now, and has been, rare in Michigan, not unheard of it is true, but perhaps less at this period when other states are having a great increase in this sort of thing, than at any time in Michigan's history.

B. R. CORBUS, *Acting Secretary*

THE STATE BOARD OF REGISTRATION IN MEDICINE

The Michigan State Board of Registration in Medicine under the secretaryship of Dr. J. Earl McIntyre has been pursuing its work quietly and unobtrusively so that many physicians in the actual practice of their profession are scarcely aware that there is such an institution. Time was when certain comment was directed towards the alleged lack of necessity for such a constituted body. That was back in the times of

generalized prosperity when it was felt in many quarters that a diploma from either one of our two Class "A" medical schools was sufficient guarantee of the candidate's eligibility to enter the practice of medicine. When institutions such as the University Medical School or the Detroit College of Medicine and Surgery endorsed a candidate, that was thought to be sufficient.

The situation at present, however, is different. There is a great clamor from applicants outside of this State to enter the practice of medicine in Michigan in competition with an already congested condition. Many of these applicants are from abroad, that is from Europe, where circumstances surrounding medical practice are anything but desirable. The secretary is besieged almost daily with applicants for license to practice in Michigan, the admittance of whom would already add to the crowded condition which prevails here. The Michigan State Board of Medical Registration has therefore taken on a new function, or, better, it has been compelled to lend emphasis to an old function, namely, regulation of the number of admissions from outside the State. The administration rules of the Michigan State Board of Registration in Medicine demand that applicants for a Michigan license must fulfill certain requirements; among them, the most objectionable to the foreign applicant is that requiring one extra year in a Class "A" medical college in the United States and one year of rotating internship in an approved American hospital. We are informed that there has been a persistent request to waive this rule, which regulation has been sustained by the Attorney-General's Department of the State. Of course it will at once appear that to grant special favors to special applicants would pave the way for all kinds of trouble with others who would seek to practise in this state without meeting the demand of rule No. 15. To let down the bars to foreign physicians would aggravate the condition under which the state is laboring in regard to the ratio of physicians to population. Furthermore it would be an injustice to young graduates of our two Class "A" medical schools, the University of Michigan and the Wayne University, who, after a strenuous and expensive course of study, must seek their fortunes, so to speak, amid conditions unfavorable as they prevail here today.

In addition to the annual and semi-annual

examinations and the regulation of licensing graduates from other states, at home and abroad, the matter of discipline is also a function of the Board. In every state there are medically trained men, few we hope, who are guilty of conduct that is at variance with good medical ethics. The majority of these are perhaps handled satisfactorily by ethics committees of the various county medical societies. The graver offences, however, must be dealt with by the Board of Medical Registration, which has certain powers over the licensing of all physicians within the state. The board endeavors to deal with these cases with as much wisdom as a body of men can exercise, endeavoring to have in mind the good of the public and the profession as well as the person at fault. An endeavor is made to exercise these powers with justice and without malice.

MEDICAL EDUCATION IN THE UNITED STATES AND CANADA

The annual educational number of the *Journal of the American Medical Association* always contains interesting data on the subject of medical education; much of it is in condensed tabulated form. Here are a few interesting facts gleaned almost at random. In eleven medical colleges the general fees are \$500 and over: in three the fees are less than one hundred dollars (\$100.00). In twenty-three colleges they range from two hundred dollars (\$200.00) to three hundred dollars (\$300.00).

There are (1933-1934) 1,428 American medical students enrolled in eighty-four medical schools in Europe, China and South America.

There are 5,488 physicians listed for Michigan in the American Medical Directory (1934), which is one for every 919 of the population. In the United States there is one physician to 814 people. The District of Columbia has one physician for 290 people.

The 1934 Medical Directory contains statistics on the number of physicians who either limit their practice to, or declare a special interest in, a specialty. The largest number is 4,452 in internal medicine, followed closely by the next largest, 4,337 in surgery. Otology, laryngology, rhinology and ophthalmology as a group come third with 4,010. Thirty-four limit their work to

bacteriology. These statistics are of those who definitely limit their practice to the exclusion of everything else. There are 8,854 apart from the surgical specialists who declare a special interest in surgery. The obstetric specialists number 356 while 2,001 declare a special interest in obstetrics.

In the year 1905 there were one hundred and sixty medical schools in the United States which graduated 5,606 that year. In 1934 there are seventy-seven medical schools which graduated 5,038 doctors.

In 1934 there are 1,020 women students in American Medical Schools, with 211 graduates, or 4.2 per cent of all graduates.

The two Class A schools in Michigan have an enrolment (1934) of 775, with 164 graduates.

THE HISTORY OF NURSING

Specific references to early nursing are very scarce. It seems logical to suppose that primitive mothers instinctively cared for their children and that some of the older women acquired a slight knowledge of medicinal herbs and plants. The old crone with her brews and incantations was probably the first to combine the duties of both physician and nurse, prescribing for the sick as well as attending them. In the pre-Christian centuries, although there are references to hospitals and medicine, little direct mention is made of nursing. Among the Greeks, Egyptians, Romans and Jews, most, if not all, nursing was done by the women of the household, assisted, in some cases, by slaves or servants. Little provision was made for the care of the ailing poor except among the Jews, who observed the Mosaic Code, and among the Indians, who, because of the Buddhistic doctrines of reincarnation, feared that the soul of a friend or relative might be imprisoned in the body of a sick beggar. The early Indian records contain the most valuable references to nursing, which was performed almost wholly by males. From the *Samhita* (compendium) of Shusruta in the fourth century comes the following interesting passage:

"Nurse.—That person alone is fit to nurse or to attend the bedside of a patient who is cool-headed and pleasant in his demeanour, does not speak ill of anybody, is strong and attentive to the requirements of the sick, and strictly and indefatigably follows the instructions of the physician."

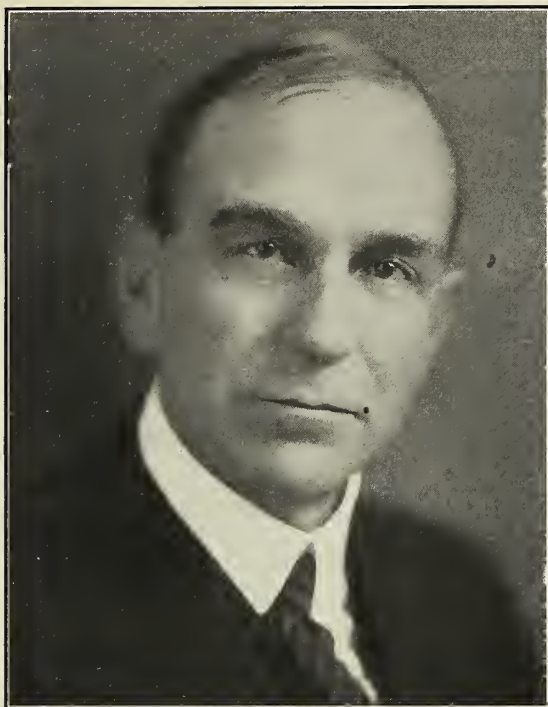
To these qualifications may be added others from the *Charaka-Samhita* of the same century:

"Nurse.—Knowledge of the manner in which drugs should be prepared or compounded for administration, cleverness, devotedness to the patient waited upon, and purity (both of mind and body) are the four qualifications of the attending nurse."

One cannot help but wonder at the amazingly high standard set for nurses at that time—a standard which could scarcely be improved today. In fact, the care of the sick in the pre-Christian era compares favourably with many succeeding periods.

With the advent of Christianity, women, particularly unmarried women, were given greater opportunities for social service on a varied scale. The earliest Christian nursing orders were the Deaconesses, Widows and Nuns, of whom the first occupied a position of great importance. The early Deaconesses were ordained by the church and had duties both secular and religious, among which care for the sick and poor was predominant. The order of Deaconesses spread rapidly into Syria, Italy, Spain, Gaul and Ireland. It was strictly ecclesiastical, with the selection and control of members lying in the hands of the Bishop; even women of wealth and nobility were grateful for the opportunity of entering the Diaconate, with the result that an exceptionally high standard was set for the group. The Deaconesses, however, had been given too large a sphere of activity, and their influence came to be strongly opposed by the clergy, so that in 251 the Roman parishes abolished the order. Nevertheless, the Deaconess continued in the East until the eighth century, although her power had gradually diminished after the fourth century, when it had reached a peak. The order of Deaconesses is of particular importance since it may be considered to have laid the foundation of nursing.

As the order of Deaconesses declined, its work was absorbed into other organizations, particularly by other religious groups. The church founded separate hospitals for men and women, and frequently these double establishments were presided over by abbesses of great influence. Among these were Radegund of Poitiers, Hilda at Whitby and Hildegard at Bingen. Such women had great administrative ability and were



DR. RICHARD R. SMITH

(President of the Michigan State Medical Society
1934-1935)

An editorial appreciation of Dr. Smith appeared in this JOURNAL a year ago on the occasion of his election by the House of Delegates to succeed Dr. George L. Le Fevre. The choice of Dr. Smith fully justifies the wisdom of his election at a time when a strong man is needed at the helm. His interests are many and varied; among them education holds a prominent place, particularly important at this time when there is such a strong incentive among the profession for post-graduate medical instruction. Dr. Smith has been early and intimately identified with the American College of Surgeons and has had a great deal to do in the standardization of hospitals. Elsewhere in this JOURNAL appears Dr. Smith's address in response to his induction as president of the Society. He has consented to address the Society from time to time by signed editorial communications.

often very learned. Hildegard, for example, wrote two large works: one upon natural history to furnish a background for medical study, and a second upon symptoms and treatment. Her work is of particular interest in indicating that nursing among religious orders had reached a fairly high level by the twelfth century. This same century also saw a definite separation beginning to take place between the establishments for the sick and those for the poor, though the sick were still largely under the jurisdiction of the church. Contemporaneously with these developments arose vari-

ous nursing orders which may be roughly classified as military, secular and religious.

The military orders sprang up to meet the exigencies of the Crusades. Their duties were a combination of war-making, charitable relief and hospital nursing under re-



DR. GROVER C. PENBERTHY

(President-Elect Michigan State Medical Society)

Dr. Penberthy is a native of Michigan, born at Houghton on March 1, 1886. His early education was obtained at the Houghton High School and his medical training at the University of Michigan, where he was graduated in 1910. His internship was served at the New York City Hospital 1910-13. He came to Detroit in 1913, where he has been in practice to the present time. He was in the army from 1917 to 1919, where he performed the duties of military surgeon. Dr. Penberthy is associate professor of surgery, medical school of Wayne University, and non-resident lecturer of the Medical Department of the University of Michigan; he is also extramural lecturer, post-graduate school of the University of Michigan. His hospital appointments include that of Surgical Director of the Children's Hospital of Michigan; Associate Surgeon Harper and Herman Kiefer hospitals, Detroit; Surgeon Michigan Mutual Hospital; Consulting Surgeon Detroit Receiving Hospital. Dr. Penberthy is past-president of both the Detroit Academy of Medicine and the Academy of Surgery. Besides the successful pursuit of his professional duties Dr. Penberthy has found time to devote to the interests of the profession of both Wayne County and the State of Michigan, and when the time comes, a year hence, to occupy the president's chair, he will bring to his new duties an experience that will be invaluable to the Michigan State Medical Society.

ligious forms. The Order of St. John became important after the capture of Jerusalem in 1099. The members rapidly gained power, and wealth and honors were showered upon them. The Teutonic Knights, dating back to 1128, and the Knights of St. Lazarus, first organized to care for lepers, were also important. Women's groups were organized simultaneously and these too were widespread and influential. The chief significance of the military nursing orders was that the glamor spread about them attracted the patronage of the noble and wealthy and greatly stimulated the founding of hospitals.

Secular nursing orders became very active early in the thirteenth century. Orders, such as the Tertiaries, existed outside the church, but were usually under its jurisdiction. Other important secular groups were the Order of the Holy Ghost, founded toward the end of the twelfth century, the Oblates, an order of women in Florence, and the Béguines, founded in Belgium in 1180. The last group in 1300 had over 200,000 members, including men and women, who served in hospitals and also did visiting nursing.

Of the religious orders, most is known about the Augustinian Sisters, one of the oldest purely nursing orders, at the Hôtel Dieu in Paris. These Sisters were in charge of the female section of the hospital and, in addition, were responsible for the laundry, household management, kitchens, etc. They lived a very secluded life, only leaving the hospital to do nursing. It may thus be noted that practically all organized nursing had a definite relationship with the church, either in inspiration or jurisdiction, a condition which continued until the latter half of the nineteenth century.

The sixteenth century saw renewed activity within the church itself. Foremost among the new orders were the Brothers of St. John of God, founded in Granada in 1540, and the Sisters of Charity in France.

The period from the end of the seventeenth to the middle of the nineteenth century is generally considered the "Dark Period" of nursing. During this century and a half, little progress was made, and there were actual cases of deterioration. The Reformation and the Renaissance seem to have had little effect upon nursing except that the confiscation of church property

necessarily abolished many church hospitals. Medicine, to be sure, had received a great impetus with the renewed interest in science, but since nursing was more closely associated with religion than with medicine, there was no commensurate improvement. Especially disgraceful were conditions in England and the United States where there were no religious organizations, although, even in Europe, the Sisters were hampered by antiquated routines.

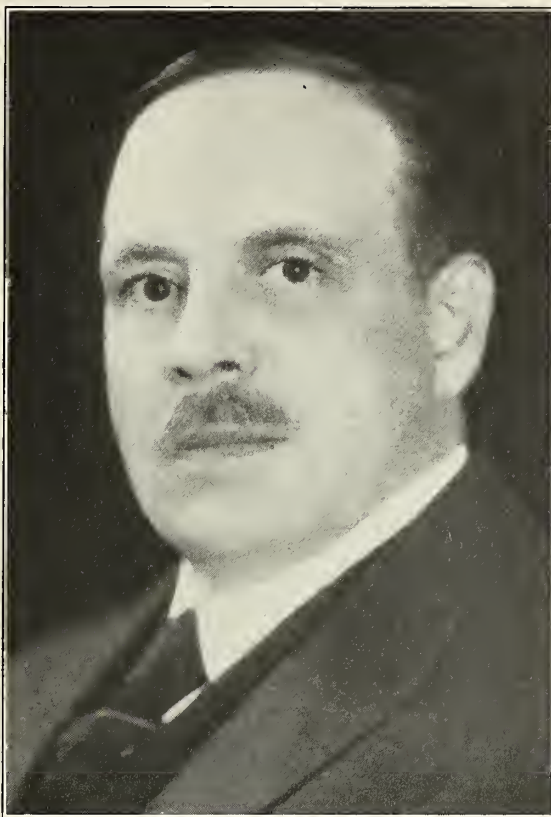
The deplorable conditions of nursing were becoming more and more obvious. Such reformers as John Howard during the eighteenth century and Elizabeth Fry during the first half of the nineteenth century agitated for nursing reform along with prison and hospital reform. One of the most important factors in the regeneration of nursing was the founding of the Deaconess Institute at Kaiserwerth by Pastor Theodor Fliedner in 1836. This was a revival of the ancient order of Deaconesses and branches soon spread outside of Germany. Kaiserwerth is of particular interest, because Florence Nightingale spent three months of training there, really the only systematic training she ever received outside of a few weeks spent with the Sisters of Charity in Paris.

Contemporaneously with Kaiserwerth, several sisterhoods in the Church of England were also founded with nursing as their primary object. The women received no training and none of these Anglican orders can properly be associated with reform in hospital nursing, because their work was solely among the poor. Hospital nursing reform is connected with St. John's House, in particular, and All Saints Sisterhood. The founding of the former in 1848 was an important landmark in nursing history since it was the first purely nursing order in the Church of England. Provisions were made for a group of nurses to receive training for two years, after which, if they were approved, they became "Nurses," receiving board, room and a small salary, and were bound to remain for five years.

One of the most original and interesting attempts to ameliorate nursing was the founding and endowing of "La Source" at Lausanne, Switzerland, in 1859 by Countess Agénor de Gasparin. She founded it largely as a protest against the "motherhouse" system, because she believed in the right of

each individual to enjoy personal liberty and to receive a salary.

The establishment of the principles of modern nursing is attributed to Florence Nightingale. Although her theoretical training was negligible, Miss Nightingale had seized every opportunity during extensive travels to visit hospitals and observe nursing so that when the opportunity for service presented itself she was fully prepared. In October, 1854, Miss Nightingale with a small group of nurses was sent to Scutari to assist in the nursing during the Crimean War. Her remarkable achievements in the face of insurmountable difficulties and her



DR. BURTON R. CORBUS

(Acting Secretary of the Michigan State Medical Society)

Dr. Burton R. Corbus became acting secretary to succeed Dr. Warnshuis until a permanent appointment is made at the winter meeting of the Council of the Society. Dr. Corbus' long experience as councillor and as chairman of the Council and Executive Committee eminently qualifies him for the new duties he has undertaken. He has a clear working command of parliamentary procedure, and probably no other member of the Society is better acquainted with the problems that confront the members of the medical profession today.



DR. JULIUS H. POWERS

(Newly elected Chairman of the Council of the Michigan State Medical Society)

Dr. Julius H. Powers of Saginaw, councillor of the Eighth District Michigan State Medical Society, has been elected chairman of the Council to succeed Dr. Burton R. Corbus, who in turn succeeds Dr. Warnshuis as secretary of the Society until a permanent appointment is made at the next meeting of the Council in January. Dr. Powers has been a member of the Council for over ten years. Dr. Powers is a native of Iowa, in which State he received his early education, graduating Bachelor of Philosophy from Grinnell College in 1901. Two years later he received the degree M.A. Following his academic training he attended the University of Michigan Medical School and was graduated M.D. in 1906. Following graduation he located in Saginaw, where he has been in practice to the present time. Dr. Powers has given special attention to general surgery. He has taken courses in surgery at the University of Michigan and at Harvard. He leaves shortly for post-graduate work in Vienna, Austria.

innovations in nursing, sanitation and administration are well known. It is certainly not strange that she became a kind of popular heroine upon her return to England in 1856. Since she would accept no personal testimonial of any kind, it was decided to establish a fund to enable her to found a nurses' training school. However, her health would not permit her to undertake the project directly, so that a subcommittee was appointed, and St. Thomas's Hospital was selected as a starting point. The first fifteen probationers were admitted in June, 1860. Miss Nightingale was consulted at every stage, but the actual respon-

sibility was necessarily assumed by the superintendent, Mrs. Wardroper, to whom much credit is due. Miss Nightingale's chief contribution to nursing was her insistence upon the necessity for training. She also caused people to realize that nursing de-

eral Hospital at Boston. By 1890, trained nursing had established its worth and proved its value to the medical profession. As the importance of training came to be more fully appreciated, the curriculum in the training schools was extended and improved.

The Nightingale School and other early schools had provided only a year of nursing training, which included a variable number of lectures on phases of nursing, taking temperature, counting pulse and respiration, and bandaging. The period of training and the scope of study were gradually increased until, in 1910, the University of Minnesota introduced a five year course of training leading to a Bachelor's degree in Nursing. This curriculum comprises two years of pre-nursing preparation, two years of professional training and one year of combined general and specialized work. Postgraduate work has also made tremendous strides during the past thirty years, permitting nurses to specialize in particular fields and to keep their knowledge up to date.

A new motive for nursing—patriotism—was provided by the Red Cross movement. The idea of the association was conceived by Jean Henri Dunant, who introduced it at an international conference in 1863. The following year, twelve countries adopted the plan, which provided for the formation of National Aid Societies which, in time of war, were to be put under military rule and to be assured of universally respected neutrality; in time of peace, they were to assist during emergencies (such as earthquakes and floods) and to promote public health. The United States did not ratify the plan until 1882, since the Civil War and reconstruction had been foremost at the time of the inception of the Red Cross idea. In 1919, the League of Red Cross Societies was formed and, by 1931, fifty-eight nations had become affiliated with it.

Probably, the most important development in nursing since the World War has been public health nursing, which covers a great field of work: bedside care, school nursing, industrial nursing, tuberculosis care, child welfare, mental hygiene and venereal disease work. Public health nursing may be either a part of the regular training course or it may be acquired during postgraduate work. Some few countries,



DR. H. A. LUCE

Dr. Henry A. Luce of Detroit has been re-elected as chairman of the House of Delegates of the Michigan State Medical Society and he has been elected also as a delegate to the 1935 annual meeting of the American Medical Association at Atlantic City.

served to be raised to the status of a profession. Finally, from the time of Miss Nightingale, nursing was extended beyond the limits of religious organizations with the result that it became more closely connected with medicine.

The Nightingale system of training nurses spread throughout the world. Women from various countries came to England to receive training which would enable them to establish similar institutions in their own countries. Changes in administration and method were introduced, but the general idea behind the schools remained the same.

In 1872, the first nurses' training school was inaugurated in the United States at the New England Hospital for Women and Children at Roxbury, Massachusetts. The following year, schools were established at the Bellevue Hospital, New York, the New Haven Hospital and the Massachusetts Gen-

such as Italy and France, have special schools for this training.

Another field of nursing which is of recent development is psychiatric nursing. The first organized course of lectures and training in mental nursing were given at the McLean Hospital in Boston in 1882, followed by lectures at the German Institute at Arnsdorf in 1884. Training is either specifically for work with the insane or may be in connection with the regular course of study. Even today, however, many countries, such as China, Bulgaria and Greece, have no definite instruction for attendants of the insane. Probably in time, all nurses will be required to have training in mental cases and then greater work along preventive and early treatment lines can be done. Prison nursing is another relatively recent development and one which is still in its infancy.

The past century has witnessed a remarkable advance in nursing. From the deplorable type of woman characterized by Dickens in Mrs. Sairey Gamp, the modern nurse has developed into an educated, efficient and admirable individual.

DR. JOHN E. CLARK

The late Dr. John E. Clark of Detroit was one of those men prominent in the medical profession, who, despite his four score and four years, was never looked upon as an old man. He was a vigorous and youthful octogenarian with a sustaining philosophy of life and a sense of humor that assured a welcome in any group. He was an excellent teacher, always interesting, and gifted with the ability to inspire others with the love of his subject. Dr. Clark was a friend of the younger man in the struggle period of the practice of medicine. For him he had always a word of encouragement and his optimism was boundless. His long experience as County Chemist developed his powers as expert witness excelled by few. He was a member of the senior group of the Wayne County Physicians organized some time ago, always welcome and whimsically facetious when he arose to address the group. It is the lot of few men to live a life so full of vigor, good cheer and service.

ANALYSIS OF FOOTBALL INJURIES

THOMAS N. HORAN, Bloomfield Hills, Mich., presents a study which includes a record of major and

minor injuries through four consecutive seasons at Cranbrook School, where 80 per cent of the boys play football and where the average school attendance is 200. The analysis of the injuries is taken from notes entered each afternoon and evening during the season. These injuries are summarized in tables and presented pictorially. The total number of injuries decreases: 243 in 1930, 112 in 1931, 68 in 1932 and 75 in 1933. This interesting reduction developed gradually as the causes for special regional injuries were examined in respect to the anatomic strength or vulnerability of the part, the character and direction of the force inflicting the injury, the distribution of padding (cotton, wool, sponge rubber and leather) within the uniform, and the style or form in play. The most serious injuries in 1930, 1931 and 1932 included a fracture of the second lumbar vertebra, a kidney blow with gross hematuria, evulsion of bone within the knee joint at the attachment of a cruciate ligament, cerebral concussion, and severe strain of the internal lateral ligament of the knee. In 1933 there were no serious injuries.—*Journal A. M. A.*, Aug. 4, 1934.

AUTUMN.

There is something in the autumn
That is native to my blood,
Touch of manner, hint of mood;
And my heart is like a rhyme,
With the yellow and the purple
And the crimson keeping time.

The scarlet of the maples can shake me
Like a cry
Of bugles going by,
And my lonely spirit thrills
To see the frosty asters like smoke
Upon the hills.

There is something in October sets
The gypsy blood astir;
We must follow her,
When from every hill a flame
She calls and calls each vagabond by name.
BLISS CARMEN.

ENDOCRINE DWARFISM

WILLIAM ENGELBACH and ROBERT L. SCHAEFER, Detroit, believe that the problem of diagnosis and treatment of statural undergrowth, or dwarfism, rightfully belongs to the general practitioner and pediatrician. One has but to study the normal growth increment curve in the human being for this proof. It testifies to the fact that approximately 50 per cent of the total growth has been attained at the age of three years. Its increasing plateau diminishes rapidly as adolescence or sex maturity is attained. It logically follows that diagnosis and adequate treatment during the infantile and early juvenile periods should give greater therapeutic results. The work of Smith indicates that thyroid extract is a valuable adjunct in this form of treatment. The cases giving the most favorable response display a delay in roentgenographic study of osseous development.—*Journal A. M. A.*, Aug. 18, 1934.

COMMUNICATION

To the Editor: Just read your article regarding the retirement of old physicians on a pension. I am very much in favor of the plan presented and would like to see it brought about.

GEO. R. WRIGHT.

Montrose
September 4, 1934

DEPARTMENT OF SOCIETY ACTIVITY

ARTICLE 2—PURPOSE

Section 1. The purposes of this Society are to promote the science and art of medicine, the protection of public health and the betterment of the Medical Profession; and to unite with similar organizations in other States and Territories of the United States to form the American Medical Association.

ACTING SECRETARY

Beginning with this issue this department has a new editor, the acting secretary. For ten years chairman of the council, he has good reason to know the load that the secretary of this Society must carry. Much is expected and required. Doctor Warnshuis has met these requirements with exceptional ability and conscientiousness.

There is a wealth of detail incident to the proper conduct of the Society's business. It is not alone the routine of maintaining contact between the general office, county units and individual members, but there is much correspondence from both within and without the state. Last year 8,958 pieces of first class mail were sent out from the office and 6,000 came in.

In addition there is the business management of THE JOURNAL. There are frequent meetings with committees and a certain amount of field work.

Doctor Corbus hopes that you will be tolerant with his errors of omission and commission during this interval period. In every possible way your acting secretary will endeavor to be of help to you. He hopes that you will frequently call upon him and he asks for your coöperation and encouragement. Please remember the new address—313 Metz Bldg., Grand Rapids, Mich.

HIGH LIGHTS OF THE ANNUAL MEETING

Your officers for 1934-35 are:

Dr. Richard R. Smith, President—Grand Rapids

Dr. Grover C. Penberthy, President-Elect—Detroit

Dr. Henry A. Luce, Speaker of the House—Detroit

Dr. Frank H. Reeder, Vice Speaker—Flint

Delegates to the American Medical Association:

Dr. J. D. Brook—Grandville

Dr. H. A. Luce—Detroit

Dr. C. S. Gorsline—Battle Creek

Dr. C. Keyport—Grayling

Dr. Hirschman holding over

Alternate Delegates:

Dr. T. E. DeGurse—Marine City

Dr. R. H. Denham—Grand Rapids

Dr. F. T. Andrews—Kalamazoo

Drs. Moll and Chester Holding Over

Council Elections:

Dr. Julius Powers, Chairman—Saginaw

Dr. T. F. Heavenrich, Vice Chairman—Port Huron

Executive Committee of the Council:

Dr. Julius Powers

Dr. T. F. Heavenrich

Dr. C. E. Boys

Dr. Henry Carstens

Dr. H. A. Luce

Dr. J. E. McIntyre

The Council appointed a special "Scouting Committee" to investigate qualifications of applicants and make recommendations for the office of permanent Secretary. This committee is headed by the president of the Society, Dr. Richard R. Smith, and, in addition, includes Dr. H. A. Luce, Dr. C. E. Boys and Dr. B. H. Van Leuven.

THE COMMITTEE ON ECONOMICS

The House adopted with little comment the following resolution:

"The House of Delegates shall postpone action on health insurance, continue the Committee on Medical Economics and shall hold itself ready for special call, if and when, any national or state program of health should appear imminent. Your Committee discourages the further expenditure of funds in this work excepting regular funds of the Michigan State Medical Society, if and when, such funds may be made available by the House of Delegates."

As a part of their final report the Economics Committee released the report of the

Sub-Committee on Post Graduate Medical Education—an exhaustive study of which we shall have more to say in future issues of the JOURNAL.

The House recorded by resolution its appreciation of the many years of service of Doctor Warnshuis and the Council and officers gave expression to the same thought in a tangible way.

See your official minutes for other important actions of the House of Delegates. They will appear in full in the November JOURNAL.

The registered attendance was 968. The quality of the program in the scientific sessions was excellent.

The hospitality of the Calhoun County Medical Society was beyond reproach.

ILLINOIS IS DISTURBED

Our Society has always appreciated and frequently profited from the comments and advice advanced by those who hold office in Sister State societies. Our Society is very appreciative of helpful and guiding advice when it is based on facts and not assumption. In a recent issue the Editor of the *Illinois State Medical Society Journal* has seen fit to make comment upon the attempt that is being made in Michigan to study medical economic conditions in our State. Considerable concern is evidenced in that editorial and condemnation is voiced for the activities of our Economics Committee. It is made to appear that Michigan's profession is casting aside the principles established by American Medicine and is permitting those who are active in social movements to dominate and direct our Society's activities and mould its future. This is far from the truth.

Michigan has always been loyal to the ideals of American Medicine. It has ever conformed to the policies of the American Medical Association and has sought to be a loyal unit of that national body. Michigan will continue to be loyal to the national body and conform to its policies.

Michigan experienced the effects of our national era of depression more severely than did many other states. In 1931 our Society's House of Delegates felt it to be not only necessary but imperative to give

consideration to the economic future of the Society's members. It did so by appointing a special committee to survey the state's medical services and health agencies. In July, 1933, the Committee presented the results of its studies. Certain facts were summarized and certain plans were advanced that might remedy some of the existing conditions, provide medical care for designated groups, relieve the profession from the heavy burdens it was carrying and afford an increase in financial returns to our members for the professional services they were rendering. Plans for the correction of clinic abuses, free service that was being given by health departments and agencies and amendments to state laws were also advanced. To provide opportunity for our members to pursue post graduate work and so be able to render a higher grade of medical care an exhaustive study of post graduate education was made. This latter report has just been released and is, we believe, the most comprehensive study existent on the subject. These findings should be of value to other states and educational institutions.

Our House of Delegates received and considered this 200,000 word report. It discharged the Survey Committee. It created a new Committee on Medical Economics and instructed the Committee to make certain studies and to bring in a plan or plans that would make it possible for people in the lower income earning group to secure adequate medical care from a family doctor. The House of Delegates formulated certain principles and restrictions that must govern and safeguard any plan proposed. The American Medical Association at its 1934 Cleveland session included these fundamentals in the principles it set forth.

In April, 1934, the Economics Committee presented a plan at a special meeting of the House of Delegates. The Committee in its report advanced a proposal that was quite general in its provisions and termed it "A Plan for Mutual Health Services."

The House of Delegates recorded general approval of the plan and instructed its Committee to continue its studies, perfect details and to again report its recommendations to that body. The Committee has been engaged in complying with these instructions and its report was presented at the September, 1934, annual meeting.

The Committee is composed of seven members, located in different parts of the state, who are all in active practice. They have given freely of their time over a period of three years without financial remuneration. The nature of the studies and investigations made as imparted in the several reports required supervision by one who was trained in making sociological investigations and statistical deductions and who could devote considerable time to travel. The Committee sought a Director of Study and eventually nominated Nathan Sinai, Ph.D., of the University of Michigan. The Council of the Society approved the nomination. Doctor Sinai was engaged and has at all times been subject to the instructions and directions of the Committee, the Council and the House of Delegates.

The Society, through its Council, expended some \$14,000 of society funds to finance the survey. The cost of preparing the "Plan" was about \$7,500. This sum was donated to the Society by the Honorable Tracy W. McGregor, a Detroit philanthropist, and was tendered without a single proviso or condition.

Still more funds were required. The Council was authorized by the House of Delegates to seek and receive additional funds from any source or sources, provided that they were given without stipulations, restrictions or requirements for any specific purpose or objective. There should be no attached condition that would change the Society's policies or expressed principles. Several possible sources were approached by a designated member selected by the Council. In due course a proposal was received from the 20th Century Fund whereby this Fund would underwrite the expenses till September 15, 1934. There were no attached conditions or terms. The money was to be received and disbursed by the Council in the same manner as that body receives and disburses all Society funds. To date about \$1,200 has been received from the Twentieth Century Fund.

The foregoing is a summarization of Michigan's Medical Economic activity. Michigan is not subsidized or holden to any outside agencies or Funds. Michigan has not relinquished or sold out its integrity or independence. It is not aligned with any social agency or group. Its employees are subject to the instructions of the House of

Delegates and Council and these employees do not formulate the Society's policies or activities.

Michigan is seeking information, it is studying conditions. It is seeking solutions and is endeavoring to find a remedy or remedies for relieving untoward conditions. It is not pledged to any plan or proposal. Michigan will continue to direct and control its own affairs as the judgment of its House of Delegates perceives the course to be pursued. An additional statement will be found on the editorial page of this issue.

F. C. W.

COUNTY SOCIETIES

EATON COUNTY

The Eaton County Medical Society held its annual picnic at Eaton Rapids on August 30. Fifteen members with their wives and guests were present and enjoyed their supper at Island Park.

In the absence of the president and vice president, the meeting was then called to order by the secretary, who turned the program over to the chairman of the committee, Dr. James Bradley. Dr. Bradley introduced "the orator of the society," Dr. A. G. Sheets. Dr. Sheets presented to the members and their wives the legislative problems now facing the medical profession. Dr. George C. Hafford, member of the Council of The Michigan State Medical Society, was introduced by Dr. Sheets. Dr. Hafford expressed pleasure in being at a meeting at which many of the future members of The Woman's Auxiliary of the Eaton County Medical Society were present.

Following the adjournment of the Society meeting, the Auxiliary held a short business meeting at which many new members joined.

JOHN LAWTHER, *Secretary-Treasurer*

HILLSDALE COUNTY

The regular meeting of the Hillsdale County Medical Society was held August 14, 1934, at the Hillsdale Country Club, Hillsdale, Michigan, with fifteen members present. The dentists of the county were asked to join in this meeting. Three were present; also four guests, Dr. George B. Darling, Dr. Emory Morris, Dr. G. M. Byington, of Battle Creek, and Dr. E. G. McGavran, Health Officer for Hillsdale County as appointed by the Kellogg Foundation.

After a dinner, the meeting was called to order by the president, Dr. H. F. Mattson. Dr. Darling was then asked to explain the general aims of the Foundation, and did so in a very interesting manner.

The dentists then repaired to a separate room for a meeting led by Dr. Morris.

Dr. Byington spoke to the Medical Society on the Kellogg Foundation Program. He was followed by Dr. E. G. McGavran, who talked briefly on his plans for this year.

Dr. Bower, Hillsdale; Dr. Poppen, Reading, and Dr. Day, Jonesville, were chosen Public Health Committee with power to act.

Dr. McGavran was voted a member of the Society by acclamation.

After some discussion, it was decided that Dr. Poppen, Delegate to the Michigan State Medical Society meeting, to be held in Battle Creek, should go uninstructed as to how to vote on the Health Insurance Plan.

Moved, seconded, and carried, that the society adjourn to meet Tuesday, September 4, 1934, at the Hillsdale Country Club.

D. W. FENTON, *Secretary*.

LIVINGSTON COUNTY

Nine members and twelve guests attended the opening fall meeting of the Livingston County Medical Society, held September 7, 1934.

After a dinner at the State Sanatorium a brief business session was called to order by the president, Dr. Leslie. The minutes of May 4, 1934, meeting were read by the secretary and approved. Several communications from the State Society secretary's office were read and discussed. Among them was a notification of the resignation of Dr. Frederick C. Warnshuis as secretary of the State Society. It was regularly moved and adopted that an expression of esteem for Dr. Warnshuis and regret for his going be sent to him.

Dr. Leslie presented a letter of resignation from the office of secretary-treasurer from Dr. Anderson. This action was accepted, and the president appointed Dr. Hollis L. Sigler, of Howell, to serve as secretary-treasurer pro tem. until the regular December election of officers.

A most enjoyable as well as profitable symposium on "Acute Poliomyelitis" followed the business phase of the evening. The following speakers participated.

C. D. Barrett, M.D., Director Communicable Diseases and Rural Hygiene, State Health Department, Lansing, discussed the epidemiology of the disease with particular reference to the Michigan epidemic of 1931.

R. W. Waggoner, M.D., Associate Professor Neurology, University of Michigan, discussed the medical problems of this important disease.

C. H. Snyder, M.D., of the Department of Orthopedics, University of Michigan, covered the corrective treatment as practiced in his department.

The entire subject was forcibly and most ably presented. We are most grateful to the speakers for a worthwhile evening.

A round table discussion followed.

R. S. ANDERSON, *Secretary-Treasurer*

UPPER PENINSULA ANNUAL MEETING

The thirty-seventh annual meeting of the Upper Peninsula Medical Society was held at Ironwood, Michigan, August 16 and 17, 1934.

Headquarters for exhibits and business and scientific sessions were held at Grand View Hospital. There was ideal convention weather and a large number assembled. Eighty-four doctors registered. A few had friends who did not register and many doctors brought their wives, to the number of thirty-four. There were also about twenty others, the wives of local doctors. In all, we had a sizeable gathering. There were 152 at the evening banquet. Ten different firms had exhibits at the meeting.

The president, Dr. Walch, opened the meeting at 10:15 A. M. Dr. Reynolds, superintendent of Grand View Hospital and secretary of the meeting, made a few welcoming remarks followed by Dr. Maloney, president of the Gogebic County Medical Society

and vice president of the Upper Peninsula Medical Society. Then followed the president's address by Dr. John J. Walch of Escanaba. A scientific paper on "Differential Diagnosis of Common Neurological Conditions Encountered in General Practice" was read by Dr. John L. Garvey of Milwaukee. The doctor presented a number of patients to illustrate his remarks.

The privilege of the floor was then given to Mrs. Guy L. Kiefer of Detroit, chairman of the Woman's Auxiliary of the State Medical Society, who urged the Medical Societies of the Upper Peninsula to organize women's auxiliaries to their medical societies. By a vote of those present, it was adopted that the societies should proceed along the line outlined by Mrs. Kiefer.

The next paper was by Dr. Charles L. Brown, associate professor of internal medicine at Ann Arbor. His subject was "Management of Hypertension." The meeting was then adjourned for lunch, which was served by Grand View Hospital. At this time the president appointed a nominating committee for officers and to select the place of meeting for 1935. The following doctors were appointed: Drs. W. E. Tew, La Bine and Huron.

With the calling of the meeting to order at 2:00 P. M., the nominating committee selected Dr. F. G. Maloney, of Ironwood, president for 1935. A motion was made and seconded that Dr. Maloney be nominated for president. The motion was carried and Dr. Maloney was elected president for 1935. Dr. E. M. Libby of Iron River was nominated for vice president and upon motion duly made, seconded and carried was elected. Iron Mountain was selected as the place for the next meeting.

The scientific program then followed. The subject "X-Ray Diagnosis of Chest Lesions" was presented by Dr. Gage Clement, roentgenologist of St. Luke's Hospital, Duluth, Minn. The second paper, "Indications and Technic of Blood Transfusions," was prepared by John S. Lundy, M.D., and Ralph M. Tovell, M.D., of Mayo Clinic, Rochester, Minn. "Injection Treatment of Hemorrhoids" was discussed by Walter A. Fansler, M.D., Minneapolis. The meeting was adjourned at 4:45 P. M.

The members then proceeded to Koerner's Resort, Spider Lake, Manitowish, Wisconsin, where a social hour was enjoyed before the banquet. The banquet was served at 8:15 P. M. During the banquet, music was furnished by the orchestra. There was considerable general singing and solos by Mr. Sherman, "the singing bandit." Dr. T. R. Rees, chairman of the Entertainment Committee, fittingly introduced the toastmaster of the evening, Dr. Louis J. Hirschman of Detroit. Dr. Hirschman, as usual, made an excellent toastmaster. After his introductory remarks and stories, he called upon the first speaker of the evening, Dr. George L. Le Fevre, president of the Michigan State Medical Society, of Muskegon. The doctor outlined some of the work accomplished by the State Society during the past year and suggested work that should be accomplished the coming year.

The toastmaster then introduced members of the State Board of Registration, who were present: Drs. Tew and Walch, Dr. Harkness, president of the Michigan Council of Health, also Drs. Curry and Lyons. Dr. H. E. Perry, councilor of the 12th district, gave a résumé of the state medical legislation during the past year. Mrs. R. I. C. Prout of Wakefield, ex-president of the Michigan State Federation of Women's Clubs, gave a reading, "The Doctor's Wife," which was enthusiastically received. Dr. Yeoman, chairman of the State Board of Registration, gave a talk on the duties and functions of the Board. The next in order was a talk by our State Commissioner of Health, Dr. C. C. Slemmons.

The meeting adjourned at a late hour and most of the guests returned to Ironwood.

The following morning the meeting was called to order by our vice president, Dr. Maloney. The following papers were read:

"Sinus Infection—Diagnosis and Treatment"—Bert E. Hempstead, M.D., Mayo Clinic, Rochester.

"Allergy in General Medicine"—Charles L. Brown, M.D., Associate Professor of Internal Medicine, Ann Arbor.

"Technic of Nerve Blocking for Various Orthopedic Operations"—John S. Lundy, M.D., and Ralph M. Tovell, M.D., Mayo Clinic, Rochester.

The final adjournment was at 12:30 P. M.

At 2:00 P. M. a golf tournament was held at the Gogebic Country Club, Dr. Aldridge of Houghton running off with honors and the cup.

The program for visiting ladies met with favorable response. The first day's noon luncheon at the St. James Hotel was attended by some forty-five or fifty ladies, and was followed by a theater party. The following morning an 11:00 o'clock breakfast was served at Little Girls Point, Lake Superior, at the cottage of Dr. T. R. Rees, after which bridge was played.

The officers of the Society wish to thank the various committees, those on the program and Grand View Hospital for making this a very delightful and instructive meeting.

FRANK L. S. REYNOLDS, M.D., *Secretary*.

Officers: Dr. John J. Walch, president; Dr. Frank G. H. Maloney, vice president; Dr. Frank L. S. Reynolds, secretary.

Program Committee: Dr W. E. Tew and Dr. A. J. O'Brien.

Entertainment Committee: Drs. T. R. Rees, C. E. Stevens and H. A. Pinkerton.

Ladies Entertainment Committee: Mrs. A. J. O'Brien, Chairman; Mrs. C. E. Stevens, Mrs. R. I. C. Prout, Mrs. T. R. Rees, Mrs. Frank L. S. Reynolds.

WOMAN'S AUXILIARY, MICHIGAN STATE MEDICAL SOCIETY

MRS. ELMER L. WHITNEY, President
18224 Wildemere Ave., Detroit

MRS. C. L. STRAITH, Secretary-Treasurer
19305 Berkley Road, Detroit

EATON COUNTY

On July 2, 1934, the doctors' wives of Eaton County met at the home of Mrs. C. A. Stimson and a new Auxiliary was organized. Much enthusiasm was shown and a fine organization is anticipated.

The following officers were elected: President, Mrs. Bert Van Ark, Eaton Rapids; vice president, Mrs. C. A. Stimson, Eaton Rapids; secretary, Mrs. K. A. Anderson, Charlotte; treasurer, Mrs. Phil Quick, Olivet.

We are very glad indeed to welcome this new county unit.

Other county auxiliaries which have elected new officers are as follows:

Calhoun: President, Mrs. A. M. Giddings; vice president, Mrs. William Dugans; secretary, Mrs. Kenneth Lowe; treasurer, Mrs. B. G. Bolton.

Jackson: President, Mrs. Glen Hicks; vice president, Mrs. M. N. Stewart; secretary, Mrs. Frank Van Schoick; treasurer, Mrs. Randall Cooley.

Ottawa: President, Mrs. Otto Vander Velde; first vice president, Mrs. William Westrate; second vice president, Mrs. Ralph Ten Have; secretary and treasurer, Mrs. Kenneth Wells.

WAYNE COUNTY

On June 5, 1934, the Auxiliary to the Wayne County Medical Society were guests, for the annual picnic, at the country estate of Dr. and Alexander W. Blain. It was an ideal day for a thirty mile drive that preceded the arrival at Island in Maceday Lake. After a cordial welcome from Dr. and Mrs. Blain conducted their guests on a tour of the island to see the many animals—deer, monkeys, swans, ducks, parrots and rare and animals which they have provided with permanent homes.

At noon, everyone gathered in the spacious room of the picturesque log cabin for their lunch and listened to tales of the many tales about the room. Later some of the members bathed in the lake and enjoyed a swim and many on the slides at the bathing beach while others rested comfortably in the summer house or on the water, visited and enjoyed the lovely view and breezes.

The Auxiliary extends to Dr. and Mrs. Blain sincere thanks for their gracious hospitality and for the delightful outing which will linger long in the memory of the members.

The long anticipated visit to Fairlane, the Ford estate at Dearborn, by the Woman's Auxiliary to the Wayne County Medical Society far surpassed all expectations. Two groups of members, "private physicians," and friends made the trip in June. They left the Wayne County Club House at 10:00 a. m. and 12:00 Noon through the courtesy of the Ford Motor Company and the Detroit Police Department, were escorted in a fleet of new Ford cars and escorted by policemen on motorcycles. The ride out and back took practically no time and was the most thrilling of the day, as red lights were passed with an unusual rate of speed while wide-eyed crowds lined the curbs attracted by the police to "watch the Fords go by."

The morning group visited Greenfield with its most interesting museum; Meridian Memorial to Thomas Edison; Ford Church, where one listened reverently to the playing of a hymn on the melodious organ; and the shepherds' cot, with its quaintly beautiful transportation through the village by horse-drawn vehicles was in direct contrast to the modern transportation just experienced.

The noon group joined the others at the Dearborn Inn. Rev. Francis B. C. Christ Church Chapel at Grosse Pointe, where Mrs. Frank W. Hartman, president of the Auxiliary, welcomed the guests and made announcements of the coming events in the Auxiliary. During the afternoon delightful music was furnished by the Inn Trio.

After a delicious luncheon came the afternoon walk in the rose garden at Fairlane. Mr. and Mrs. Blain were most hospitable in allowing the gathering to wander at will through the wooded grounds of their estate. Many tree houses, baths, and feeding shelters bore witness to the love of birds. The widespread tree canopy provided welcome shade during the walk to the no place in the world can one view more varied and larger variety, than at Fairlane. The grounds bounded at either end by screened garden where a sheltered view of the flowers was enjoyed. This vast vista of fragrant bloom on two sides by trees, and through the a little rippling stream which empties into the lake filled with mammoth goldfish.

Those who wandered down by the

the boat houses containing many kinds of craft, and some of the guests saw the swimming pool in a wing of the house. The view from this point included a beautiful formal English garden with a summer house at the far end.

The hours passed rapidly, and four-thirty, the time to start for home, came only too soon. Everyone felt a debt of gratitude to Mr. and Mrs. Ford for their generous hospitality and the day will be long remembered by those who were privileged to go. To Mrs. Frank W. Hartman, president of the Auxiliary, whose careful planning and direction made this perfect day possible, we express our appreciation.

(MRS. CLIFFORD) LORRAINE E. LORANGER.

OBITUARY

Dr. Henry Graham Bartlett

Dr. Henry Graham Bartlett of Benton Harbor died at his home on Aug. 22, in his 65th year. He had practised in Berrien County for thirty years. Dr. Bartlett graduated from the Detroit Homeopathic Medical College in 1896. After six years' practice at Broda he began to limit his work to eye, ear, nose and throat and had offices at St. Joseph's, Michigan, where he carried on his practice until February, 1931. He then moved to Benton Harbor, where he carried on his practice up to his last illness. He was at one time City Health Officer of Benton Harbor, during which term he rendered valuable service, particularly in getting through some of the first ordinances on milk as well as sanitation and welfare. Dr. Bartlett is survived by his widow; a daughter, Mrs. Thomas Quiery of Milwaukee; two sons, Lieut. W. H. Bartlett of West Point, N. Y., and Dr. Walter M. Bartlett of Greenwich, Conn.

Dr. John E. Clark

Dr. John E. Clark of Detroit died at his home September 19, 1934, at the advanced age of eighty-four years. He was born in London, England, in 1850 and came to Canada, where he received his early education in the high school and at Victoria College. He studied medicine at the University of Michigan Medical School, where he was graduated in 1877. He began practice in Detroit the same year and continued in practice there until his last illness, which was only four days' duration. Along with his practice Dr. Clark had been Wayne County Chemist since 1898. He was for forty years dean of the department of pharmacy and professor of chemistry and toxicology of the Detroit College of Medicine. He retired from his teaching position in 1932. Dr. Clark took a keen interest in civic affairs and was a member and former president of both the Board of Education and the Public Library Commission. He was especially active in the organization of the Detroit Teachers' Retirement Fund. Dr. Clark was a member of the Wayne County Medical Society; the Michigan State Medical and American Medical Associations. On him was conferred the honorary degree of Doctor of Science by Wayne University. He is survived by one son, Dr. Harold E. Clark; a daughter, Mrs. Keller; and a brother, Dr. George E. Clark, all of Detroit.

GENERAL NEWS AND ANNOUNCEMENTS

The minutes of the annual meeting will be published in the November issue.

The Grand Rapids Clinic has dissolved. The building will be operated by the Blodgett Hospital for doctors' offices.

Dr. A. R. Hufford, Grand Rapids, has been appointed Medical Examiner for the Aeronautics Division of the Department of Commerce.

Dr. F. Menees and Dr. J. D. Miller of Grand Rapids received honorable mention for their Scientific Exhibit at the Cleveland A. M. A. meeting.

Dr. A. B. Toaz and Dr. A. O. Brown of Detroit left September 12 for Europe where they will visit the important medical centers for post-graduate work.

The many friends of Dr. and Mrs. Robert G. Owen of Detroit sympathize with them in the death of their son, Robert G. Owen, Jr., aged twenty years. Dr. Owen, the father, is director of the Owen Clinical Laboratory, Detroit.

The annual conference of secretaries of constituent state medical associations met at the Palmer House, Chicago, September 21 and 22. Dr. Richard R. Smith, president of the Michigan State Medical Society, and Dr. Burton R. Corbus attended the convention.

A member of the Michigan State Medical Society reading the editorial on "Old Age Pensions for Physicians" which appeared in the August number of this JOURNAL writes: "I would like to see the old age pension for physicians in force, as many older men have lost most of their life savings by the depression, myself included, and must continue to practice as long as possible."

Dr. John E. Handy was a guest of honor at the Caro Rotary Club on Monday, August 27, an occasion which was further graced by the presence of his old friend and practitioner, Dr. Sample of Saginaw. Dr. Handy was presented with a certificate of honorary membership in the Caro Rotary Club. In conclusion Dr. Handy in a well worded address expressed his gratitude for the demonstration in his honor.

Early in the summer a circus made its annual visit to Detroit. The physician of this particular circus had been for years a friend of the late Dr. Neal Hoskins. Knowing that Dr. Hoskins had passed away the group on arriving at Detroit with a number of sick performers, got in touch with the late Dr. Hoskins' office, now occupied by Dr. W. J. Stapleton. Dr. Stapleton made a visit to the circus and immediately hospitalized a number in whom he diagnosed typhoid fever, which of recent years has become a rare disease in Detroit. The cases were of course immediately reported to the Board of Health, who at once cancelled the licenses of all concessionaires, inspected the methods of handling food

and methods of sewage disposal. A general examination and taking of temperatures took place. Approximately seventy persons were eventually hospitalized. A number of the cases were serious, resulting in seven deaths. Fortunately the prompt apprehension of the condition has resulted in no further spread of the infection nor inclusion of any citizens of Detroit.

The Surgical Staff of Butterworth Hospital tendered a farewell plantation dinner to Dr. F. C. Warnshuis on September 1 and presented him with a pen and pencil set. On September 6 at a meeting of the Kent County Medical Society Dr. Warnshuis was given a farewell ovation and was presented with a traveling radio set. Dr. and Mrs. Warnshuis left Grand Rapids September 15 for his new duties in California. His address is Suite 2004, 450 Sutter Street, San Francisco, Calif.

The following officers were elected for the year 1934-1935 by the Section on Dermatology and Syphilology at the Michigan State Medical Society meeting held in Battle Creek, September 11, 12 and 13, 1934: Chairman, Dr. A. R. Woodburn, Grand Rapids; Secretary, Dr. G. Warren Hyde, Detroit.

The Radiological Society of North America will hold its next annual meeting at the Hotel Peabody, Memphis, Tennessee, December 3-7, 1934. Members of the medical profession are cordially invited to attend. Further information may be obtained by addressing the Secretary-Treasurer, Dr. Donald S. Childs, 607 Medical Arts Building, Syracuse, New York.

MEDICAL EDUCATION IN MICHIGAN

The *Journal of the American Medical Association* for August 25, 1934, contained the following information regarding the medical schools of this state.

UNIVERSITY OF MICHIGAN MEDICAL SCHOOL. Organized in 1850 as the University of Michigan Department of Medicine and Surgery. The first class graduated in 1851. Present title assumed in 1915. Coeducational since 1870. It has a faculty of 26 professors, 13 associate professors, 28 assistant professors, 152 assistants, instructors and lecturers; a total of 219. The entrance requirement are ninety semester hours. The curriculum covers four years of nine months each. The total fees for Michigan students are \$200, \$205, \$205 and \$202 for each of the four years, respectively, plus a matriculation fee of \$10; for nonresidents, \$100 a year additional. The matriculation fee for nonresidents is \$25. The total registration for 1933-1934 was 451; graduates, 98. The eighty-fifth session begins Sept. 24, 1934, and ends June 17, 1935. The Dean is F. G. Novy, M.D.

WAYNE UNIVERSITY COLLEGE OF MEDICINE, 1516 St. Antoine Street.—Organized as the Detroit College of Medicine in 1885 by consolidation of Detroit Medical College, organized in 1868, and the Michigan College of Medicine, organized in 1880. Reorganized with the title of Detroit College of Medicine and Surgery in 1913. The first class graduated in 1886. In 1918 it became a municipal institution under the control of the Detroit Board of Education. In 1934 the name was changed by the action of the Detroit Board of Education to Wayne University College of Medicine, as a part of the program of consolidation of the Detroit City Colleges into a university system. Coeducational since 1917. Entrance requirement is an academic degree or 90 semester hours of academic credit with "combined

degree" guaranteed by school of arts and sciences. The faculty consists of 33 professors, 101 lecturers and others, a total of 134. The course covers four years of nine months each and a fifth hospital intern year. The total fees for each of the first four years are, for Detroit residents, \$283; for nonresidents who reside in Michigan, \$383, and for nonresidents from outside the state, \$408. For the fifth or intern year the resident student fee is \$50; the nonresident fee is \$85. The total registration for 1933-34 was 324; graduates, 66. The fiftieth session begins Sept. 27, 1934, and ends June 21, 1935. The Dean is W. H. McCracken, M.D.

TYPHOID FEVER IN DETROIT

First Eight Months of 1934

There has been more typhoid fever in Detroit during the first eight months of 1934 than has been experienced for some time. The incidence has been as follows:

January, 1; February, 2; March, 1; April, none; May, 3; June, 2; July, fifteen residents and forty-nine employees of a circus; and August, 12.

Two typhoid carriers have been found, two patients received their infection from carriers, five received their infection from drinking infected water, one while bathing in water known to be infected, and five received their infection while caring for cases of typhoid fever. The source of infection of eight is not definitely known, while the source of infection of twelve is definitely known to have been outside of Detroit. Also the circus employees, of course, received their infection outside of Detroit. The remainder are being investigated as to their sources of infection.

The most spectacular event was the finding of forty-nine cases of typhoid fever among 1,450 employees of a circus visiting Detroit on July 22 to 24. Seventy-seven employees were removed during the second and third days and forty-nine of these were found to be infected. Many of these employees were working in food concessions. These were closed as soon as this fact was discovered. It is of interest to note that no secondary cases have been traced to this circus as a source of infection up to September 10.

The staff at Harper Hospital offered their services and a special ward for the care of these cases and suspected cases of typhoid fever. Seventy employees of the circus were left in the hospital. The Health Department loaned the services of Dr. Don W. Gudakunst to accompany the circus while it remained in the state. From Detroit the circus went to Flint, where the medical personnel found 7 more suspected cases among the employees. These were sent back to Harper Hospital. From Flint the circus went to Lansing, where five more employees were hospitalized in Lansing. The following day the circus went to Kalamazoo and three employees were sent to the Sparrow Hospital at Lansing.

As soon as it became apparent in Detroit that a number of cases of typhoid fever were present, the State Department of Health was notified and a representative was detailed. The State Department of Health notified the U. S. Public Health Service and a physician and an engineer were detailed to investigate and take such methods as was deemed necessary to protect the public.

A few cases had developed before the circus arrived in Detroit. Three had been left in Cincinnati and one in Dayton. The primary source of infection has not yet been determined.

DETROIT DEPARTMENT OF HEALTH

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LESIONS OF THE ESOPHAGUS*

ROY D. McCLURE, M.D.†

DETROIT, MICHIGAN

The "little red lane" of childhood's memory and imagination is not always the peaceful canal through which placidly passes the food that supplies most of the elements for growth and energy. After full growth is attained only replacement and energy fuel is needed. Close observation shows that many adults ship through this canal supplies, beyond requirements for their sedentary existence, and often of questionable character. With the careless eater the bolus may be gulped down too hot, too cold or too large. It may contain bones or other foreign bodies. Adventure and tragedies may center along this short but vital channel.

The esophagus in the average sized adult is 25 centimeters or 10 inches long. This muscular tube extends from the pharynx to the stomach. The upper end is marked anteriorly by the level of the lower border of the cricoid cartilage and posteriorly by the top of the sixth cervical vertebra in the midline. The lower end is marked by the hiatus of the diaphragm opposite the tenth thoracic vertebra as the esophagus enters the stomach. It is marked anteriorly by the seventh left costal cartilage.

Abel¹ described five normal constrictions of the esophagus—

1. At the upper orifice at the level of the lower border of the cricoid cartilage.

2. At the level of the upper aperture of the thorax. This narrowing is due to the crowding together of the structures passing through this upper opening of the chest.

Foreign bodies are most frequently arrested here.

3. Behind the arch of the aorta—at the level of the fourth thoracic vertebra.

4. Behind the left bronchus—opposite the fifth thoracic vertebra.

5. At the hiatus of the diaphragm—opposite the tenth thoracic vertebra.

There are two definite sphincters. At the upper orifice the lower fibres of the inferior pharyngeal constrictor muscle from the crico-pharyngeal sphincter which draws the posterior lip of the esophagus against the cricoid cartilage, closing the canal.

The inferior or cardiac sphincter is a specialized portion of circular muscle fibres extending about one inch and stopping one inch above the lower orifice of the lumen of the esophagus. These sphincters are normally in a state of tonic contraction.

The physiologists have supplied much information concerning the reflex action of the sphincters. The upper sphincter relaxes as the normal bolus of food passes through the pharynx. If it is too hot or too cold or too caustic a second reflex is excited, and a spasm is reported to occur at either the upper or lower sphincter. Recently, however, Hurst² denies that there is a spasm of these sphincters but that the reflex of relaxation is

*Read before the annual meeting of the Michigan State Medical Society, Battle Creek, September, 1934.

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interfered with. He claims that at autopsy there has never been found hypertrophy of these muscles such as would occur if there were prolonged spasm. However, the end-result is the same, for there is obstruction, with unpleasant effects. This condition may be brought on by a nervous system upset from sudden shock or prolonged worry. I wish to present a case with brief history and x-ray picture illustrating this. (The cases presented today are to point out possible complications.)

CARDIOSPASM

Case 1, No. 204686.—This patient came to us from New York City on August 28, 1934. Her chief complaint was difficulty in swallowing, with associated feeling of fullness in the neck of five years' duration and with uncontrollable regurgitation of food and thick mucus of one year's duration. She stated that she was quite well until the summer of 1929, when she first noticed difficulty in swallowing and a sensation of fullness in her neck. She had lost her husband and all of her property. She noticed a peculiar sound as though air were rushing in her neck. This condition progressed gradually until about a year ago, at which time her father died suddenly. The condition rapidly became much worse. She now had very frequent spells of regurgitation without nausea, usually following the taking of food; but she had no gastric distress. She regurgitates and then comes back and finishes her meal. At night she has paroxysms of coughing, and in the morning is surprised to find thick mucus and undigested food on her pillow. She has observed undigested food taken twenty-four hours previously. During the last year she has become exceedingly nervous. She tires easily and her heart pounds rapidly. The history suggests cardiospasm. Gastro-intestinal x-rays confirmed this, showing evidence of a constriction of the cardiac end of the esophagus (Fig. 1). There was no evidence of filling defect, and there was marked dilatation of the esophagus above the constriction. Reverse peristalsis could be seen on fluoroscopic examination, and an x-ray diagnosis of cardiospasm was made.

She now tells us that the diagnosis of cardiospasm had previously been made in New York and that she had taken large doses of belladonna without benefit. Treatment here has consisted in lavage of the esophagus and the swallowing of a heavy silk thread with a very small metal tip. Dilatation was carried out by Dr. Mateer on September 4, 1934. An air pressure bag, measuring five and a half inches in circumference, was used, and an air pressure of 270 millimeters was maintained for twenty minutes.

Since the dilatation the patient has improved. She eats normally and she has been much more relaxed. She is now on a high caloric, low residue diet with high vitamin content. While she swallows without difficulty, much attention must yet be directed to her neuro-psychiatric condition and further dilatation, if she has a recurrence, will be necessary.

The peristaltic mechanism of the esophagus is controlled through the sympathetic nervous system. During recent years much surgery has been done on the sympathetics in an effort to treat many conditions due to

disturbance of its proper function, especially in connection with the cardiovascular system. One of my associates, Dr. L. S. Fallis, returned only last week from a visit to the English Clinics, and reports that Mr. George Gask, Professor of Surgery in the University of London and Chief of Staff at St. Bartholomews Hospital, has recently developed a new operation for the treatment of cardiospasm. In two cases he has stripped the adventitia with the sympathetics from the celiac axis (the La Riche type of operation) and obtained cures. He also reports that Mr. Quarry Wood, a surgeon on the staff of the Royal Infirmary in Edinburgh, has found in many dissections that the sympathetic nerve supply to the lower end of the esophagus is derived almost entirely, if not completely, from fibres accompanying the left gastric artery. He accordingly has severed this artery between its origin and the esophageal branches. This is, of course, a much simpler operation, for the celiac axis is not easily accessible.

Cardiospasm is probably a true neuro-pathic condition and we doubt whether such operations should be done except in a rarely persistent case; for our present method of forcible dilatation, with careful attention to the neuro-psychiatric condition, has been satisfactory in a fairly large series treated by Dr. Mateer and Dr. Kreutz.

It should be borne in mind, however, that a rigid instrument in the esophagus in the hands of a patient or unskilled doctor is fraught with danger of perforation.

Hurst² describes recently achalasia, which is a disease of anemic women associated with glossy, smooth, patchy tongue and also some failure of the sphincters of the esophagus to relax.

Today, rather than devote attention to one lesion I have chosen to present several cases which illustrate various lesions and also the advances in the means of diagnosis and methods of treatment during the lifetime of many of us present. I well remember forty or forty-five years ago the chief instrument of my father, who is still practicing medicine at the age of 80. It was a large bolus of soft bread or banana used in an effort to dislodge a fish bone, the presence of which could neither be proved nor disproved. The x-ray and the esophagoscope were unheard of at that time. The probang and bougie about completed the armamentarium of the practitioner of those

days. Today, of course, with the aid of the x-ray, opaque meal and the esophagoscope, a new era is open.

cision and drainage, which was done on June 3, 1933. The esophagus was exposed through an incision along the anterior border of the left sterno mastoid muscle at the bottom of an abscess cavity.



Fig. 1. Case 1. Typical case of cardiospasm, showing retention of barium.

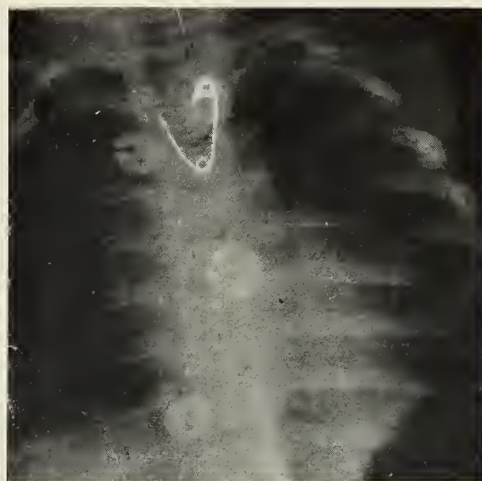


Fig. 2. Typical case of foreign body in esophagus. Open safety-pin in esophagus, removed through esophagoscope.

FOREIGN BODIES

I wish to present two cases of foreign body in the esophagus, which at least were not located by x-ray examinations, though theoretically they should have been, nor was one of them located on examination with the esophagoscope.

Case 2, No. 188282.—An unmarried school teacher, aged forty-three years, was admitted May 22, 1933. She had eaten chicken two hours previously, at which time she felt something sharp strike the "right side of her throat about the region of the upper part of the chest." Such localization is misleading for a patient's sensation is not a criterion of the true site of the foreign body.

Examination of the region described showed no scratches or abrasions. The following day, May 23, a fluoroscopy of the esophagus was done with negative findings. The symptoms still persisted and on May 27, 1933, Dr. Kreutz did an esophagoscopy, and removed a foreign body. This was at the cricopharyngeal juncture. It was a sharp piece of bone which had perforated the esophagus, and was bathed in pus. Following its removal the patient continued to have a high daily temperature and pain and a fulness at the base of the left side of the neck developed. I saw her in consultation and advised in-

A very foul, purulent material escaped. This abscess extended into the superior mediastinum into which I could pass my finger full length. Patient made an uninterrupted recovery and was discharged from the hospital on June 24, 1933.

One month later the wound had healed and she has had no further symptoms. More often such a mediastinitis is followed by death.

A side issue in this case in connection with insurance was as to whether the bone should have been in the dish served. In certain servings of chicken apparently bone is permissible and in others it is not.

TRAGEDY

Case 3, No. 131789.—Boy, aged twenty, was admitted on June 14, 1929, giving a history of having had a feeling of something sharp slip down his throat while eating chicken at 6 P. M. When first seen he was not particularly worried about his condition though his family were apprehensive. There was no particular pain.

Esophagoscopy was done following a negative x-ray of the esophagus. It was reported that there was no foreign body seen in the upper part of the region of the esophagus where foreign bodies usually appear. There was some injection in the mucous membrane in the mid-thoracic region. The patient became nervous and apprehensive. On June 18, he had a little pain in the mid-thoracic region but sedation was given and he seemed to improve. On June 22, eight days later, at his last visit to the hospital, he complained of a little pain on swallowing solid food. On June 24, ten days after the injury, he telephoned the hospital that he was symptom-free and was eating everything without pain, and that he did not feel it necessary to return to the hospital.

A report of an autopsy done at the County Morgue on this patient on July 12, 1929, showed a perforation of the aorta caused by a sliver of chicken bone.

ESOPHAGEAL VARICES

A third lesion of the esophagus not very common and usually a condition secondary to luetic or alcoholic cirrhosis of the liver is esophageal varices. These occur at the lower end of the esophagus and not infrequently are accompanied by hemorrhages. Such hemorrhages are frequently fatal as in the case of two doctor friends of mine whose names are familiar to you. I am presenting one case of such severe hemorrhages whose life has at least been prolonged if the condition has not been cured by repeated massive transfusions and two operations in an indirect approach at the cure of this condition.

Case 4, No. 183147.—A married housewife, aged forty-one years, was brought to us on March 29, 1933, as an emergency in a critical condition, with a history of recent large emeses of blood and the massive passage of blood by rectum. The patient had profuse hemorrhages while under observation. She vomited 600 c.c. of pure blood, and on another occasion 350 c.c. Repeated blood transfusions were given. Diagnosis of hemorrhage from esophageal varices was made by a process of exclusion based on the probability of patient having luetic scirrhus of the liver in view of a positive Wassermann, though the liver was barely palpable. The spleen was enlarged.

It was felt that the hemorrhages were coming from esophageal varices, and I ligated the coronary vein above the lesser curvature of the stomach on March 31, 1933. (This operation has recently been reported from the Mayo Clinic, and it does cut down the amount of congestion in the esophageal varix.) Following the operation she received numerous transfusions and eventually recovered, and was discharged from the hospital May 2, 1933. At the time of operation, with ligation of the vein, it was noted that she had a large spleen and only a mild cirrhosis of the liver. Splenectomy was considered, a tentative diagnosis of Banti's disease having been made, but the patient's condition would not permit splenectomy at that time.

She then had a comparatively long period of freedom from hemorrhage. On October 10, 1933, the patient was readmitted following a severe hemorrhage. She was again repeatedly transfused and her condition improved up to the point when operation could again be considered. Splenectomy was performed on October 24, 1933. The diagnosis of Banti's disease was confirmed at this time. The patient had a stormy, post-operative period, but since that time has steadily improved, and her condition is now (September 10, 1934) very satisfactory. She has had no further bleeding. It would seem that the removal of the spleen has slowed down the volume of blood passing through the esophageal veins, and has at least temporarily improved her condition. Direct approach to a bleeding varix may increase the hemorrhage rather than alleviate it.

CARCINOMA OF THE ESOPHAGUS

One-half of all lesions of the esophagus are cancer. Richard Cabot believes that more mistakes are made in diagnosing cancer of the esophagus than in any other condition. In 20 per cent of the cases dysphagia is never present. One in every twenty, or 5

per cent of all cancers, are of the esophagus; and less than ten have ever been cured.

We have had a fairly large series of cancer of the esophagus but I will present only one case briefly to point out the necessity of early esophagoscopy for early diagnosis.

Case 5, No. 192303.—This patient, an Hungarian sweeper, aged fifty-five years, was admitted October 5, 1933, with a history of dysphagia for the past two weeks. Solid foods seemed to stick about half way down. He had to wash his food down with liquids. Swallowing was often painful, especially with solid foods. He had lost ten pounds in weight in the past four or five weeks. He had pain in the right upper quadrant, which seemed to radiate around to the interscapular region. This pain was worse at night. He vomited food once or twice, but no blood. The condition had steadily been getting worse. He could not rest at night.

Physical examination had no special bearing on the condition. Hemoglobin was 75 per cent, Wbc. 10,600, blood Wassermann was negative. The x-rays showed an area of irregularity in the mid-portion of the esophagus with a traction diverticulum projecting posteriorly. There appeared to be a calcified gland in this region. There was not a complete obstruction. On October 9, 1933, Dr. Kreutz did an esophagoscopy and biopsy. At about the mid-point of the esophagus obstruction of a nodular type was met. The passage of a very small probe was possible. The growth had not yet fungated but bled quite readily. Clinically it appeared to be carcinoma. Biopsy showed squamous cell carcinoma, Type II.

On October 16, 1933, radium was inserted (140 mgm.) under local anesthesia. On October 24, 1933, he had gained almost ten pounds in weight, was able to eat without discomfort, and he was fairly comfortable.

Life probably could have been prolonged by gastrostomy. Patient died February, 1934.

Our own operations for carcinoma of the esophagus have been only of a palliative nature, such as gastrostomy, or surgical drainage of the mediastinum. The latter operation was done in three cases after ruptures of the esophagus years ago in Baltimore and Detroit. The skilled esophagoscopist of today does not have many such accidents.

Many operations have been done for removal of these difficult tumors. Restoration of the esophagus has been done by means of plastic skin tubes outside of the chest wall joining the proximal end of the esophagus in the neck and the small intestine or stomach below. I predict, with the increasing skill of those doing chest surgery, many advances are coming soon, on the direct approach to cancers of the esophagus.

STRICTURES

This paper would not be complete without presenting a stricture, and the classical example is in one who has swallowed lye.

Case 6, No. 161457.—The patient was admitted April 4, 1931, with chief complaint frequent vomiting

He gave a history of having drunk some lye six weeks previously. He was treated for five days at the receiving hospital, and then returned home. After his return home his only symptom was excess saliva.

Wilcox³ in Detroit recently reported stricture of the esophagus due to tertiary syphilis.

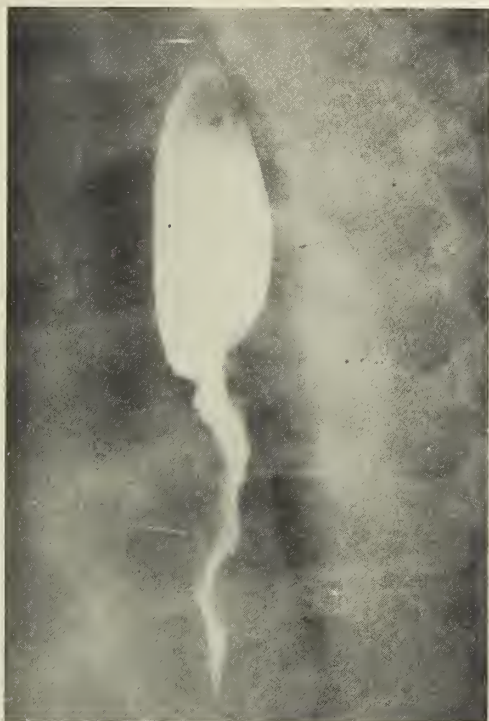


Fig. 3. Carcinoma of esophagus, showing obstruction and feathery edge of stricture, an important diagnostic feature.

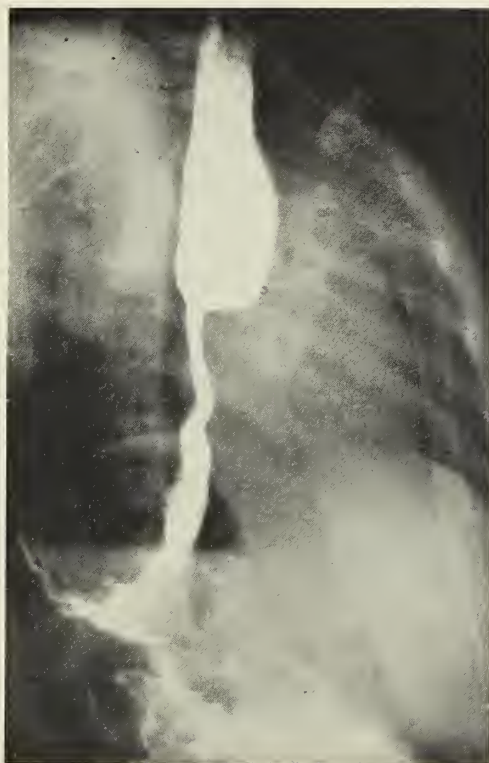


Fig. 4. Case 6. Stricture of the esophagus after drinking lye in suicidal attempt. Kept patent by frequent dilatations.

About three weeks prior to coming to the hospital he began to vomit food, and was able to retain only about half of what he ate. There had been only slight pain associated with vomiting, no history of hematemesis and no history of blood in the stools.

Physical examination showed evidence of emaciation and malnutrition. Otherwise it was negative. A blood Wassermann was negative. X-rays showed a smooth stricture at the level of the sixth dorsal vertebra. Dilatation of the stricture and gastrostomy were advised. Gastrostomy was done by Dr. Allen on April 22, 1931. Following this the patient's general condition improved. During the course of the next year the stricture was dilated twenty-eight times and the gastrostomy allowed to heal. He has not been seen since April 20, 1932, and there is no follow-up on him. This is a City Welfare case; so apparently his condition is satisfactory, else he would have returned and we would have seen more of him.

In our experience in Baltimore, New York City and Detroit, gastrostomy was first performed only on emaciated patients. Their strength was restored before the tedious dilatations were attempted. The swallowing of a thread as a safety measure for the instrumentation is desirable, and often absolutely necessary.

ULCERS

We have seen peptic ulcers of the esophagus and seen them respond to ordinary gastric ulcer therapy—sometimes surgical with a gastro-enterostomy.

Case 7, No. 34744.—Ulcer with stricture—probably not peptic.

This man, now aged fifty-one years, was first seen here ten years ago, at which time he gave some vague symptoms of gastric distress and occasional vomiting and nausea. During the intervening ten years he became a narcotic addict, and was a pronounced alcoholic. He returned here again on January 5, 1933, with a diagnosis of ulcer of the esophagus which was confirmed at a clinic in Pennsylvania. The diagnosis of esophageal ulcer was first made by Dr. William Hyland of Grand Rapids, who referred him to the clinic in Pennsylvania. He had apparently visited many clinics. He was at a Minnesota Clinic in 1930, where a diagnosis of mild depression with psychoneurosis was made. No definite mention was made of the esophageal condition. In March, 1931, he went to an Ohio Clinic, where a diagnosis of cirrhosis of the liver was made, largely on his alcoholic history, and omentopexy done. A portion of the liver removed at the time of the op-

eration failed to reveal any definite evidence of cirrhosis.

On admission here in January, 1933, he gave a history of having had regurgitation and pain for

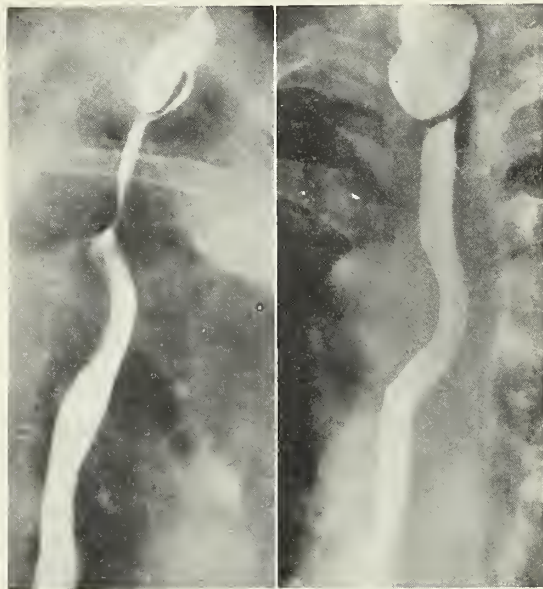


Fig. 5. Diverticulum of esophagus. Anteroposterior and lateral views to demonstrate posterior position of the sac of the diverticulum.

the past two and a half years. On several occasions he had had a large hematemesis. In addition to the omentopexy, at a later date he had had his gall-bladder removed.

Esophagoscopy was done by Dr. Kreutz on January 30, 1933. The upper two-thirds of the esophagus was found to be normal. The lower third showed a small bleeding ulcer situated on the posterior and left side of the quadrant. This did not bleed very readily but was exquisitely tender, and below it the esophagus was definitely constricted, in a conical manner, to a diameter of 5 millimeters. A section of the stricture was taken for biopsy and this failed to reveal any evidence of malignancy. Repeated dilatations of the esophagus were advised and carried out. Since that date the patient has had repeated esophageal dilatations, and when last seen, on November 5, he was still very much emaciated and had difficulty in swallowing his food. Of course, here we must contend with the factor of chronic alcoholism, and drug addiction.

His physician later performed a gastrostomy on this patient. Improvement and gain in weight followed, but the patient died September 15, 1934, following a cerebral hemorrhage of one month previously.

DIVERTICULA OF THE ESOPHAGUS

For years this term was used for pharyngeal diverticula and so pharyngeal diverticula appear in the literature as esophageal diverticula. Not to change the nomenclature too quickly the term pharyngo-esophageal diverticula has been used, with good arguments in its favor. Lord Moynihan, a high authority, objects to this term on purely

anatomical grounds; and in 1932 he wrote a letter to *Surgery, Gynecology and Obstetrics* (54:128, Jan. 1932) saying:

"There is no such thing as 'pharyngo-esophageal' diverticulum. There are 'pharyngeal' diverticula, and 'esophageal' diverticula; those to which Dr. McEvers refers are pharyngeal. The name of Zenker must not be attached to these interesting sacs. They were first most accurately described and most perfectly illustrated by Ludlow in a letter to William Hunter in 1764. His specimen of a 'prenatural dilation of, and bag formed in, the pharynx' (please note 'pharynx') is still perfectly preserved in the Hunterian Museum at Glasgow. Monro, Sir Charles Bell, Matthew Baillie, and others gave accurate descriptions of the condition. Dr. McEvers speaks of the 'Laimer-Hackermann point.' It is Laimer who was prosecutor at Graz, and Haeckermann, now of Bremen, in whom interest centers. The 'point' to which Dr. McEvers refers is not a point but an area. The 'Laimer-Hackermann point' becomes therefore the 'Laimer-Haeckermann area.' It is not true that in this area the pharyngeal pouches originate. They arise above the sphincter formed by the crico-pharyngeus muscle and the Laimer-Haeckermann area is not of the slightest importance. These elementary truths were pointed out by me in a paper in the *Lancet* which unhappily has escaped Dr. McEvers' notice. In the final paragraph of this Article I say, 'Few subjects in surgery are so littered with inaccurate references and incorrect names as this.'

"I write not solely to call attention to the facts mentioned, but to encourage my American friends to perform the operation of resection of these pharyngeal pouches in one stage. If a surgeon is competent and has perfect technique there is really no need whatever for operations in two stages. I have operated upon fifteen cases (one on the right side) and have never had any difficulty in obtaining healing by first intention."

There are esophageal diverticula resulting from injury to its wall from inflammation and then scar traction. These seldom demand or receive treatment.

To complete our case reports I will show a slide and present this case which formerly we would have called an esophageal diverticulum as it does arise through the fibres of the lower constrictor fibres of the pharynx, above the fibres of the crico-pharyngeal muscle.

Case 8, No. 178327.—The patient arrived from California and was admitted June 29, 1932. She was considering operation for esophageal diverticulum, which had been diagnosed the previous year. She also had a large substernal goiter bearing more to the left and pushing the trachea to the right. There was considerable calcification of this gland. She had been operated upon twenty-five years previously by Dr. Albert Kocher for goiter.

The patient eventually decided to go to Dr. Lahey for operation. He did this operation in two stages according to his method. The first stage was done September 27, 1932. The operation was difficult because of adhesions from the previous goiter operation. The second stage was done on October 7 eleven days later. Patient apparently made a satisfactory recovery from her operation. When she was

seen here in October, 1933, she had a stricture of the esophagus, which we found necessary to dilate.

Dr. Lahey advises dilatation of all of these patients as a routine after operation.

There are two schools, one advocating a single stage and the other the two stage operation for these diverticula. There was a third school advocating merely the diverticulo-pexy or the suturing of the tip of the sac to the structures in the neck anteriorly and higher up; and many good results were reported. A fourth school advocated inversion of the sac. In my own series of operations for this condition I have two patients who never would permit the second stage of the operation as they had obtained complete relief, and today they are well without any symptoms.

The chief advocates of the single stage operations are Lord Moynihan, Chevalier Jackson and Wilkie. The danger of this operation is leakage, cellulitis of the neck and mediastinitis—often fatal.

My own feeling is that the two stage operation is far the safer in the hands of the average surgeon. The sac inversion operations⁴ have been given up in favor of the two stage operation by most surgeons in this country. There are many advocates of the two stage operation. Lahey has recently reported a large series without a death.

I do want to emphasize that many patients with esophageal lesions are late in seeking advice; and the physician when consulted should be alert in seeking the correct diagnosis. This can only be made with the help of the x-ray, the esophagoscopist and the pathologist.

BIBLIOGRAPHY

1. Abel, A. L.: Esophageal Obstruction—Its Pathology, Diagnosis and Treatment. London: Oxford Univ. Press, 1929.
2. Hurst, A. F.: Some disorders of the esophagus. *Jour. Am. Med. Assoc.*, 108:582-586, February, 1934.
3. McClure, R. D.: Pharyngeal or pharyngo-esophageal diverticulum—A new operation: inversion and snare. *Am. Jour. Surg.*, 24:732-745, 1934.
4. Wilcox, L. F.: Tertiary syphilis of the esophagus with report of a case recognized roentgenologically. *Am. Jour. Roent. and Rad. Therapy*, 31:773-777, June, 1934.

THE PRESENT OBSTETRICAL PROBLEM*

HAROLD A. FURLONG, M.D., F.A.C.S.†

PONTIAC, MICHIGAN

Recently in magazines and newspapers, articles have appeared setting forth the dangers of childbirth in this country. The public has been aroused by these statements. Granting that obstetric mortality and morbidity are too high in this country, my contention is that this condition is not entirely the fault of the regular medical profession, but that there exist other contributory factors, which must be considered and remedied in solving this very important problem.

While there should be, under ideal conditions, practically no mortality following childbirth, and while the present mortality rate is unquestionably high, the sob sisters in the lay press should not lose sight of the fact that conditions have infinitely improved in the last fifty years. In the sixties, recalled by many men of today, at Bellevue, one of the best hospitals in New York City, sixty out of every hundred women confined in that institution died of puerperal sepsis. If the advance in scientific medicine during the last fifty years has lowered the nation-wide mortality to 6 per cent, is there not some

other explanation than ignorance or neglect on the part of the medical profession, to explain why this last percentage seems too high?

In my opinion the factors which contribute to the present high mortality rate are: public indifference to the advice of the medical profession; the attitude of the public towards the abortion problem; licensing of irregular medical practitioners; indiscriminate licensing of so-called maternity homes; emergency relief standards of medical practice; the failure of medical programs in the average home; inadequate undergraduate education in medical schools; and the failure of the medical profession to regulate the specialists' qualifications.

*Chairman's address delivered before Section of Obstetrics and Gynecology, Michigan State Medical Society, Battle Creek, Michigan, September 12, 1934.

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For several years the medical profession has been warning the public concerning the dangers of pregnancy and labor. For the most part these warnings have fallen on deaf ears. More consideration is given by the average family in the choice of color of the new automobile, than the choice of an obstetrician. The general public remains coldly indifferent to the ravages of the preventable toxemias of pregnancy, and is periodically wildly inflamed by the latest nudist colony. Obstetrics is the most common serious medical problem confronting the average family and in that respect mirrors the effectiveness of the whole program of modern medicine. From the general indifference, in my opinion, the conclusion is warranted that we have a long way to go in the education of the public in medical matters, that our program has not been effective, and that being heedless of the danger the average citizen helps to keep obstetric mortality rates high.

Hospital births have constantly increased, more people are seeking better obstetrical care, more completely trained obstetricians are available, and yet these facts are insignificant compared to the great number of births that still occur in homes, and under most unsatisfactory surroundings. In my opinion this condition will prevail for many years yet to come, and public interest and coöperation is vital if the conditions are to be improved. In the squalor of the below average American home of which there are unfortunately far too many, it is hopeless to match the safety and antiseptic regime of the elaborately equipped maternity wards, but as our program of medical progress unfolds these homes will be less frequently encountered. It doesn't help the cause of better obstetrics to have irresponsible authors flay the modern maternity hospital in the light of the overwhelming picture of unsanitary conditions with which modern obstetrics has to compete. The modern program of prenatal care and intranatal asepsis have yet to spread among millions, if the public does not know we must teach them.

Too little has been said about the abortion problem. Public opinion encourages the flourishing business of the quack, unscrupulous physicians and meddlesome females who engage in the traffic. The general attitude is one of good natured acquiescence. If a death results from this practice the culprit may be punished. The situation re-

garding abortions is somewhat analogous to that which existed during the prohibition era; there are adequate laws concerning abortion but public opinion discourages their enforcement except in the case of death. The hospitals and doctors bear the brunt of the criticisms, yet hospitals and doctors know that the abortionist is contributing abundantly to our present high mortality rates associated with reproduction. The abortion problem is a very ancient one, and probably will be a factor in obstetric mortality until enlightened opinion makes available contraceptive advice in place of abortions.

Government through abuse of its licensing powers is contributing to the high death rate in obstetrics. The protection of public health is a function of the government which we willingly delegate to public officials because of its primary importance. We give to the state the powers of licensing the cults who practice on the border line of medicine. These irregular practitioners soon transgress and begin to actually practice medicine, and are protected by their state license. Ill-defined laws permit them to safely transgress beyond the intent of their license. Because obstetrics constitutes such a large proportion of general medical practice it is not unusual to find these cultists practicing obstetrics, and from their unskillful ministrations a large number of unsavory obstetrical tragedies result for which the regular medical profession is usually blamed because the public makes no distinction between the doctor and the quack.

Again the State constantly grants a license to maternity homes. The State assumes to regulate maternity homes but really exercises no supervision over these homes once the license is secured. The result is the license issued by the state is a protection for any crooked work that goes on. In Oakland County there are fourteen licensed maternity homes, only three of these are general hospitals. They are in many cases veritable pest houses charging exorbitant rates for services they cannot render, with government sanction. Under the very eaves of an hundred-bed hospital there is little excuse for a one-bed maternity home. In the grand total of obstetric death rates these homes make their contribution.

It seems necessary to sound a word of warning about the present system of medical care under the Emergency Relief Commit-

tees of the various counties. For many years general practitioners have shuddered at the thought of state or socialized medicine, yet today they have been blindly participating in a program of state medicine. Medical relief as it is handled today in Michigan is a direct entry of the State into medicine, and the profession accepts it with an open hand. Look over all the vaunted benefits of state medicine, balance that against the present system of medical aid to the indigent and you have before you the full picture of what social medicine has to offer the American people. The public receives the most indifferent obstetrical care in the home—never in the hospital except in emergency cases—usually after failure of delivery in the home. Prenatal care is neglected or placed at a very minimum, naturally if the doctor is only to be paid for three antepartum visits that is all the patient will get. The competitive incentive so necessary to successful medical practice is removed under the present medical relief system, and no one can hope for improvement in the obstetrical statistics under such a system.

The medical profession has been so completely indicted upon the obstetrical problem and the arguments used are so well known that it seems unnecessary to spend much time upon that phase of the subject in this instance. The fact remains that the physician most assuredly cannot escape his responsibility in this problem, and that means as individual practitioners and as organized groups. The encouraging thing is that generally the doctor does not wish to escape doing his full duty to protect the public health. The physician remains the fighter who must bear the brunt of the attack upon the forces which destroy the mother and infant in childbirth. If this fighter in the front line trench is poorly trained, indifferent, or uses poor judgment, no matter how fine the plan of the general staff of the master strategists at the great University clinic—the whole fight is lost. Medicine must continue to develop a program of medical education which will train young men to perform the function of general practice which a majority of them are annually expected to assume. The man who enters the general practice of medicine is not necessarily expected to perform surgical operations of major importance, yet a majority of his undergraduate and post-graduate work has been in surgical fields. He is, however, expected at once to become an ob-

stetrician. Many young doctors get their start in medical practice because of their obstetrics, but they are not given adequate obstetrical training in medical college to prepare them for that career. Medicine, working to discharge its full responsibility to state and public must soon solve this problem.

Recent surveys by the New York Academy of Medicine and the United States Department of Labor, draw the conclusion that many maternal deaths are preventable. Many maternal deaths result from operations in labor by attendants whose training does not qualify them to undertake such major procedures. One great and lasting indictment against the medical profession is the improper use and abuse of obstetrical operative measures, and no one but the medical profession itself, by educational programs, post-graduate training, certification of specialists, staff organization of hospitals and constant propaganda can reduce the danger from this source. The frequent practice of assuming to be a specialist without necessary qualifications is something that the medical profession itself must control, through society boards or other means of examination and then inform the public adequately on the action taken. My conclusion in this respect is that today the public is becoming more and more medically enlightened, and that if the profession does not do some of these things itself, in a few years more it will be done by lay activity in a way much less pleasant and arbitrary to the interest of medicine.

Realizing that a great majority of obstetrics is practiced in the home, more emphasis should be placed upon this phase of medical service. If the blessings of modern medicine are to be of universal benefit, methods of home delivery must be taught the profession and the service which is carried into the home improved. Many clinics have out-patient dispensaries and their technic is quite satisfactory. But these methods need a more general application to be of service in reducing obstetric mortality. The ingenuity of modern men need not be stagnated by this problem of obstetrics but because of its century-old presence it should be a greater challenge.

The position of modern medicine in society is a very enviable one. However, the prestige of the medical profession has several weak spots; in other words, medicine

has not yet achieved equal prominence and success in all fields. Lay writers are only too glad to attack medicine, and like all good strategists they naturally pick out the places where the armor is weakest. Obstetrics as it is ultimately practiced in the homes of the public is one of the weak spots of medicine. All seem to agree that the maternal mortality and morbidity rates are too high. Medi-

cine is in the uncomfortable position of realizing the situation, knowing that the public and government are equally to blame, and yet having to take all the blame. My action has been prompted by a desire to call critics of medicine to task, and make them realize that they are partly to blame, and that medicine is aware of the difficulty and does not wish to escape its responsibility.

WHITHER SURGICAL PRACTICE*

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While this is a scientific section with its time supposedly taken up with clinical and scientific considerations, it has been urged upon me to bring before it some practical matters strewing the pathway of the surgeon of today with threatening and menacing difficulties and actually obnoxious obstructions. Not only are these disturbing the surgeon himself but they are hindering and altering the service he is prepared to deliver. The selection of the subject is emphasized, too, because it has been my lot to practice surgery with an office facing Lansing capitol square for more than twenty years, affording intimate relationship with legislative, social and economic problems, managed, directed, and interfered with, in my very neighborhood and with many intimacies and some animosities thereby created.

Prior to some fifteen years ago most medium sized cities had, not to exceed, one to three members of the profession who were accepted by their fellows and by laity as competent surgeons. Often in a medical center, there was a single outstanding and distinguished surgeon. Among the latter it was almost the rule that the fame of this man had extended far and the respect and confidence placed in him put him on a pedestal as adviser, teacher, and as a preceptor in its literal sense. It seems certain that the great energy directed towards hospital standardization has resulted in wider opportunity for training and later for practice, greatly changing former conditions and multiplying the number of surgeons. And there is another great change which has resulted, I think, from the same cause. Formerly all surgeons were, with very few exceptions, general surgeons entering any region of the body and attacking many organs. Specialization in various fields of surgery greatly

altered surgical practice. However, I think it is generally observed that the tendency today is towards reversion to general surgery just as there is a definite tendency towards general practice. And these tendencies result from the economic conditions experienced by both doctor and patient.

These trends and conditions have brought all surgeons to a commoner plane than heretofore, that is, outstanding reputations of individuals are less frequent and leaders and creators are comparatively fewer than formerly. It may be said without fear of successful contradiction that surgery is being done, at the present, with greater proficiency than ever in the past. Probably it must be admitted that opportunity is waning for brilliancy and for the spectacular because of the great accumulation of experience and the increased dissemination of knowledge and training.

One of the worst discouragements to the well trained young surgeon, at the present time, is that which legalizes equality in all registrants in medicine. He is without particular legal designation of extraordinary qualifications attained.

In consideration of needed amendments to Medical Practice Acts attempt has been made to give attention to the defining of specialists. It appears that there is no source that may be acceptably recognized to have

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legal authority from which definitions may be drawn. The special societies have done much to lay the foundation for the requisite qualifications for the practice of this and that specialty but to date they are held to be self-appointed bodies. Activities in hospital standardization have led to better selection of proper qualifications and to affect the restriction of the work in the various departments to those best qualified to do it.

When a surgeon has been ideally trained I think he will have difficulty in remembering when he did his first operation for he will have assisted and participated under guidance with increasing liberty as he gains in experience. He will never have plunged into deep water with another's life at stake before he has gained judgment and exactness which comes solely by repetition under instruction and guidance.

It is he who plunges in and attempts to do that for which he is not prepared and then meets with disaster because he becomes confronted with unexpected conditions that injures surgery and injures those who have conscientiously trained. A surgical disaster in a community usually reflects longer upon all recognized surgeons in that community than it does upon the one who fell into the trouble. As the tale is repeated the name of the perpetrator becomes lost and superseded by that of a reputable surgeon and then another and so on. Other hospitals are named. The reflection becomes general and surgery is badly condemned.

Individualism is an outstanding characteristic of the Doctor of Medicine. The nature of his experience makes it so. One who practices surgery exclusively may be less individualistic than the physician on account of the former's necessity and opportunity of contact. Whether it is realized or not a surgeon's practice is largely influenced by public opinion, requiring of the surgeon considerable recognition of it. If he could go a few steps farther in his experience with public opinion he could greatly aid the profession at large in its need for a better understanding by the public. Were this lack of understanding between the public and the medical profession not so, many of the State Legislative needs could have been obtained long ago.

Since its enactment in 1927, the provisions in the Crippled Children's Law and the administration of it are preventing the employment of many of the foremost ca-

pable surgeons of the State—an injustice to surgeon, patient and taxpayer. The inclusion of the administration of the Afflicted Children under the Crippled Children's Commission in 1933 has not lessened costs nor led to the general utilization of local surgeons as was intended. Judicious airing of such defects, unfair to surgeons, and of extravagances, burdening taxpayers, would soon lead to proper correction.

Economics and sociology are so engulfing the surgeon that many are not encouraging young men today to study medicine. There is a distinct fear or at least a fearful uncertainty of what the future holds. When we rebel at curtailments of our liberties and recite the restrictions to our neighbors in business and industry are we not told that ours are no worse than theirs? If this is true, and most doctors will not gainsay that it is, are we not driven into politics for great and essential reasons? Are we not more vitally concerned in the affairs of the nation than ever before in our lives? Is it not an opportunity to advance the needs we know best when one of our own number enters the political arena?

When federal provisions throw thousands into the medical service pot with medical service offered free to all comers under certain inclusive specifications and the profession is offered this as practice at fee schedules below the cost for which best scientific practice can be delivered, shall the profession be satisfied? It was not through preparedness of the profession that this occurred. And what is this sort of service leading towards? If there is no certain answer this may be said at least, "We're going away from accumulated standards and are threatening destruction to advancement of scientific practice. Initiative is being reduced and individual responsibility is being lessened."

While there is a large population that deserves aid there is included with them an enormous number of the undeserving, of malingerers and of human parasites. On the other hand, there is a tremendous population who desire and demand individual medical service and desire to secure that good brand of service which is obtainable by paying going rates of service with the preservation of mutual independence and of that cherished relationship of doctor and patient.

In answer to the charge of the high cost

of surgery I quote from a paper I presented to a lay audience a year ago.

"If going to the hospital is for the sole purpose of trained care and opportunity of scientific service instead of luxurious bridal-chamber rooms and unneeded special nurses, with hours off, then and definitely then, costs will come down to levels not out of keeping with general ability and willingness to pay.

"There is no plausible reason for the contention of uplifters that the best medical care is the heritage of every American regardless of his means. Charity is not a franchise, it is only a favor, a favor proffered to the needy and to no one else. It may

impose upon the benefactor something he chooses to regard as a duty but it does not give a vested right to the beneficiary."

If the profession keeps its feet on the ground, if the profession continues to keep its shelves stocked with individual scientific service and takes care of its proper charity in traditional independent fashion, it will sustain its self-respect and retain public good will. It is declared we are entering a new era but we cannot suddenly leave behind old human nature.

INDICATIONS FOR AND TECHNIC OF THE INDIRECT CITRATE METHOD OF BLOOD TRANSFUSION*

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Transfusion of blood was attempted many years ago and by a great number of investigators who, always in search of the ideal method, had to surmount innumerable difficulties before the operation could be placed on the practical basis it is today. Many references have been made in the medical literature to the report of an attempt at transfusion by a Jewish physician, in 1492, prior to actual experimentation in the procedure, to save the life of Pope Innocent VIII. It is recorded that blood from the Pope was first allowed to run into the vein of a youth whose blood was then transferred into the vein of the old man. A. H. Matthews discredits this report, however, in his "Life and Times of Rodrigo Borgia," in which he says, "It is related that, during his last illness, the operation for transfusion of blood was unsuccessfully performed. This, however, is an error arising from two important facts: first, that the idea of this operation could not occur to any one to whom the circulation of the blood was unknown, and second, that the phenomenon of the circulation of the blood was not discovered until the seventeenth century. Raynaldus and Infessura say that a certain Jewish physician undertook to restore the Pope's health. For this purpose he drew all the blood out of three young boys, who immediately died. With their blood he prepared a draught which failed to improve the sick pontiff's condition. The saving virtue of drinking human blood was no new idea."²⁸

In 1628, William Harvey published his celebrated treatise, "Motion of the Heart and Blood," although in 1616 he had already

presented his views concerning the circulation of the blood in lectures at the College of Physicians. Some reference is made to transfusions performed by an Italian physician, Francesco Folli, in 1654, and by Daniel, of Leipzig, in 1664; most writers however, regard Richard Lower, of England, who in 1665 was the first to practice blood transfusion experimentally, and Jean Denys, of France, who was the first to perform transfusion with human subjects, in 1667, as pioneers in this field. Lower effected transfusion by anastomosing the artery of one animal into the vein of another by means of a cannula, or pipe, and Denys successfully transfused a man with the blood of a lamb. About this same time similar procedures were being carried out by King, in England, by Immèrets, in France, and by Riva, and Manfredi, in Italy.

Because of the number of deaths resulting from the practice, the operation was proscribed in France by the Supreme Court, and for more than a century no further work was done in blood transfusion. The new procedure had been enthusiastically received

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by the profession, but it was not until Blundell, in England, revived the interest of the medical world, in 1818, that further advancement was made. Blundell made use of blood transfusion on a larger scale. He employed a syringe connected by a two-way stopcock to a receptacle and to a tube which in turn was connected with a cannula for insertion into the vein of the recipient. He experimented first on dogs, transfusing from artery to vein; later, he performed transfusions in man. He reported four cases; in two of these his patients had died. The largest amount of blood he used was 480 c.c.

The injection of defibrinated blood was introduced by Bischoff, in 1835, and it became popular with such workers as Prevost, Panum, Dieffenbach, and Brown-Sequard. In spite of the objections of Koehler, Landois, Gesellius, Ponfick, and others, who saw danger in this form of transfusion because of the excess of fibrin-ferment injected, its use was continued throughout the nineteenth century and was also quite extensive during the first decade of this century. During this period Higginson and Aveling devised the method of using two cannulas, attached by tubing to a bulb syringe. A glass cannula was used by Gesellius and Leisrink in 1872; in 1875, transfusing directly from vein to vein, Landois employed cannulas and tubing.

In the latter part of the nineteenth century, transfusion became an established procedure and was practiced extensively. It was employed quite frequently in cases of carbon monoxide poisoning, and leukemia. Although these operations were at times very successful, severe reactions, such as oppressed breathing, choking, and other more or less serious symptoms, often occurred. These reactions were likely to be attributed to the accidental entrance of air into the vein; however, it is certain from our present knowledge that many of them were the result of incompatible bloods.

Among the first in this country to employ transfusion was Fryer, who recommended its use among asthenic patients before and after necessary surgical measures in order to avoid pyemia. The injurious effects of transfusing the bloods of dissimilar species were pointed out by Dumas, Prevost, and Landois. The value of transfusion following hemorrhage was early appreciated, although it is apparent that the transfusion

was employed solely with the view of replacing lost blood. In 1875, Lesser advocated autotransfusion by the application of Esmarch bandages to the extremities.

Following the introduction of normal saline solution for intravenous therapy in 1875, the employment of blood transfusions was gradually abandoned in favor of saline infusion. Hodder, in Canada, in 1850 had reported cases in which patients with cholera were treated successfully by intravenous injection of fresh cow's milk, and Brinton, lecturer at the Jefferson Medical College in 1878, advocated the injection of milk in place of blood transfusion.

At the beginning of the nineteenth century, the two chief dangers associated with blood transfusion, hemolysis and clotting, were rapidly being overcome. The phenomenon of the agglutination of human corpuscles by human serum was first pointed out by Landsteiner, and in 1901 he divided human subjects into three groups according to the agglutinating reaction of their blood. That human subjects fall into four groups was first proved by Jansky in 1907, and this was later confirmed by Moss and Ottenberg, working independently. Moss's classification is now used generally, although Ottenberg's classification is practically the same except that his Group IV is the Moss Group I, and vice versa.³¹

The microscopic test was the first method employed for determining the compatibility of the donor's and the recipient's blood. Although this method is time-consuming, since the test must extend over night to obtain the most accurate results, it is an excellent one and is still employed in some hospitals. However, various workers have developed a number of more rapid microscopic methods which are now usually preferred.

The Brem method is one which has been found to be exceedingly satisfactory. In this procedure it is necessary to have on hand serum and fresh corpuscle suspension, either of Group II or Group III, and both the serum and corpuscle suspension of the unknown. It is preferable to use blood of Group III in testing unknowns, since there are so few persons in this group that it is only seldom that there is no agglutination. If the Group III serum agglutinates the unknown corpuscles, the unknown must be either in Group I or Group II, and to which of these two groups it belongs is determined by the result of the action of the unknown

serum on the Group III corpuscles. Agglutination of Group III corpuscles by the unknown serum shows that it is in Group II, the reciprocal in Group III. If Group III corpuscles are not agglutinated by the unknown serum, but Group III serum agglutinates the unknown corpuscles, the unknown blood is in Group I. However, if the Group III serum does not agglutinate the unknown corpuscles, the unknown is in either Group III or Group IV. If there is no agglutination of the Group III corpuscles by the unknown serum, and there is no agglutination of the unknown corpuscles by the Group III serum, evidently the unknown is in Group III. Group IV blood is diagnosed by the fact that the unknown serum agglutinates the known corpuscles, whereas the unknown corpuscles are not agglutinated by the known serum.

Another microscopic method often used is that devised by Moss, the technic of which is quite similar to that of the Brem method except that serums of Group II and Group III are used for testing the group of unknowns. Only a corpuscle suspension of the unknown blood and hanging-drop preparations with both Group II and Group III serums are necessary. Group I corpuscles are agglutinated by both Group II and Group III serums. Group II serum will not agglutinate Group II corpuscles, but Group II corpuscles will be agglutinated by Group II serum. Group III corpuscles will be agglutinated by Group II serum and not by Group III serum, whereas Group IV corpuscles will not be agglutinated by either Group II or Group III serum.

Of these two methods Moss's is the most convenient, since the corpuscle suspension necessary for the Brem method will last but a few days, where Group II or Group III serum may be preserved in the ice-box for a considerable length of time. The Brem method, however, has the advantage of giving a more clear-cut picture by the use of fresh blood. Sanford suggested desiccation of the serum for its preservation, but it was pointed out by Korsner and Koeckert that such preparations must be used fresh, since after several weeks the dried serum apparently acquires agglutinating properties of a nonspecific nature. Later, Sanford attempted to improve the method for preservation by a process of complete dehydration.³⁴

With the masterful work in surgery of

the blood vessels carried on by Murphy in 1897, Doerfler in 1899, Carrel and Guthrie and by Crile and others, transfusion was taken up again on a large scale, especially in this country, and it led to the development of more certain methods of transferring blood. Carrel and Guthrie perfected suture of blood vessels, affording for the first time a safe way of transferring blood from donor to recipient without the risks and dangers of coagulation. In order to obviate the great technical difficulties of artery-to-vein anastomosis, Crile employed a cleverly devised cannula, modifications of which were originated by Elsberg, Buerger, Janeway, McGrath and others. Later, a simpler and quite as satisfactory method was found in vein-to-vein anastomosis. About 1906, C. H. Mayo began transfusions of blood at the Mayo Clinic. In 1909, Brewer and Leggett advocated the use of a paraffin-coated glass tube placed between the artery and vein. Sections of vessels of the lower animals were also used with some success.

The greatest objection to these methods was the impossibility of ascertaining the exact amount of transfused blood. To overcome this, Curtis and David employed a receptacle for the blood and then reinjected it, coating the inside of the whole system with paraffin. Modifications of this idea were devised by Kimpton and Brown, Percy, and by Satterlee and Hooker. A method of transfusion by means of syringes and cannulas was devised and employed successfully by von Ziemssen in 1892. This method never became popular and was almost forgotten until Lindeman revived it and improved the technic. The syringe method then became so popular that it practically did away with all the different direct methods. Although it involved considerable expense and required specially trained operators and assistants, who had to work together with great precision and observe a great many technical details, there can be no doubt that it gave excellent results. Unger, however, recognized the difficulties of the syringe-cannula method, and he constructed a very ingenious apparatus, consisting of a stop-cock, which alternately connected a syringe for blood to the donor and at the same time a syringe with saline solution to the recipient; then, by turning the cock, the syringe with blood was immediately connected to the recipient and the syringe with saline

solution to the donor.^{36, 37} Freund and Kush also utilized the principle of the two-way stop-cock in devising their modifications of Lindeman's technic.

Up to this time the success of most methods depended on the rapid transference of blood from donor to recipient in less than normal coagulation time. It was realized that the attainment of the ideal depended on the development of a means of retarding the coagulation time without altering the normal properties of the blood. Among the different methods of attaining this end were dilution of the blood with normal saline solution and addition of anticoagulating substances, namely, hirudin, sodium citrate, sodium oxalate, peptone, and glucose.

Lewisohn experimented first with hirudin, but he found this drug to be so toxic, when given in sufficient quantities to prevent clotting, as to render it entirely impracticable.¹³ Experiments and clinical application of transfusion performed with citrated blood were published in 1914 and 1915 by Hustin, Agote, Weil, Lewisohn, Rueck, and by others. Lewisohn¹³ and Agote both published their first articles on the citrate method in January, 1915, each having worked independently of the other and without knowledge of the other's work. Agote performed his first transfusion in man by this method November 14, 1914, whereas Lewisohn's first transfusion with a human subject was not done until January 7, 1915.¹⁶ Lewisohn, however, preceded his application of the procedure to man by a series of animal experiments which extended over a number of months.¹⁴ No such experimental work was reported by Agote. Both men, no doubt, deserve credit for having originated the technic, although Lewisohn's subsequent work is considered more important in placing the method on a safe basis. Agote confined his work to small transfusions and did not determine whether transfusions of average size could be given with this method without causing toxic effects, nor did he study the effect of anticoagulants on the coagulation time of the recipient. Consequently, his work is of no more than a certain historic interest.

In the early use of the citrate method, because of its extreme simplicity, transfusions were turned over to very inexperienced operators. It was believed that the greater occurrence of chills with the citrate method in comparison to those following

other methods carried out only by experts was due to the faulty technic of the improperly trained operators. However, instead of the percentage of chills decreasing in the course of the years in which the technic was greatly improved, there was a marked increase. Lewisohn¹⁷ then attributed this to the presence of foreign protein, and he demonstrated that by a thorough cleansing of all instruments for removal of old blood and by elimination of foreign protein from the distilled water, the occurrence of chills could be considerably lessened.

Soon after the introduction of the citrate method, Unger published results of experiments and claimed that sodium citrate had a deleterious effect on the blood, stating that it increased the fragility of the erythrocytes and decreased the phagocytic power of the leukocytes. Even though the claims of Unger were disproved by Mellon, Hastings, and Casey, Unger's observations were quoted extensively in the literature and thus created the erroneous impression that citrated blood could not be used advantageously in the presence of a large variety of diseases. Lewisohn demonstrated the safety of the citrate method by injecting 80 and 100 c.c. of citrated blood into more than a dozen infants without any untoward symptoms. In his further experiments he concluded that objections brought forward against the clinical value of citrated blood were without a proper basis, and in comparing effects of citrated and unmixed blood he found that the citrated blood in every instance proved clinically as beneficial as the unmixed blood.¹⁵ There has always been much interest in the procedure.^{2, 3, 9, 19, 22, 23, 24}

A report of the results of blood transfusions performed at The Mayo Clinic between 1915 and 1918 was published by Pemberton in 1919. In this period 96 per cent of the transfusions were done by means of the citrate method. Pemberton classified the indications for transfusion according to the presence of pernicious anemia, secondary anemia, bleeding, acute toxic and septic conditions, leukemias and shock. In pernicious anemia definite beneficial effects were observed in a very large percentage of cases, although the percentage of occurrence of the milder reactions following transfusion was decidedly greater than in other classes of cases. Archibald, who made an extensive study of some of the cases in this series, concluded that the greater num-

ber of patients with pernicious anemia, except those who had reached the very last stages of the disease, received immediate benefit from transfusion. The value of transfusion as a supportive measure preliminary to operation in secondary anemias was found to be illimitable. In combating the general oozing which follows certain operations, the results were strikingly good, although in the presence of certain malignant diseases the hemostatic value of the transfusion rapidly decreased after a certain period of time. Because blood transfusion was employed too late in most of the cases of acute, toxic and septic conditions, the results were not entirely encouraging; however, Pemberton believed that if given shortly after, or in some instances before, operation, it offered a reasonable means of combating infection. As a temporary supportive measure,⁷ the employment of transfusion was justified in cases of leukemia, whereas in the one case of shock it was without beneficial effect. As a general rule, blood transfusion is indicated in hemorrhage, shock, secondary anemia, and as a supportive measure in the extremely debilitated patient who must undergo operation.^{6, 12, 18, 25, 26}

Because of the flexibility of the indirect citrate method, it has become the favorite of the day and has been used for eighteen years in the majority of the 16,250 blood transfusions done at The Mayo Clinic up to July 1, 1934.

The donors are divided into two groups: the professional and nonprofessional. In either case the donor's blood is examined for group, according to both the Moss and Landsteiner classifications,³²⁻³⁵ for flocculation test, and for blood count; the urine is also examined and for the professional donor a physical examination is made.^{5, 20} The reactions of donor and recipient to transfusion have been taken up elsewhere.^{10, 29}

The amount of blood drawn for the average adult patient is 500 c.c.; smaller amounts are drawn for children and for selected adult patients. The donor is called to the transfusion room and placed on the table. To expedite the drawing of blood, the professional donor's veins have been graded as poor, fair, good or excellent and, in an emergency, only a donor with good or excellent veins is summoned. The arm is surgically prepared with alcohol and draped with sterile towels. A tourniquet is applied,

a wheal is raised in the skin with 1 per cent procaine solution, and a large bore needle, depending on the size of the vein, is inserted into the vein after the needle has been attached to a 12 inch (20 cm.) rubber tube with a small lumen through which the blood will flow rapidly. The donor is asked to open and close his hand to further hasten the flow of blood, as it is important that the blood run in a stream; otherwise, it will clot. The blood is collected in a graduated vessel of 500 c.c. capacity into which has been poured 50 c.c. of normal saline solution containing 18 grains (1.17 gm.) of sodium citrate. Sodium citrate is obtained in ampule form, and the ampules are kept sterile and ready for use. With a glass stirring rod the nurse mixes the blood with the citrate solution continuously until the whole amount has been drawn. If the recipient should not be moved, the blood is given to him as he lies in bed. If the recipient can be taken to the transfusion room, the blood is given to him there. In either case the arm is prepared in the same way as was the donor's. A smaller bore needle is introduced into the vein and connected to a rubber tube and a buret containing about 50 c.c. of normal saline solution. As soon as one is sure that the saline solution is entering the vein satisfactorily, the citrated blood is strained through gauze into the buret. The speed with which the blood is allowed to enter the vein is limited to a maximal rate of 15 c.c. each minute. The needle is drawn out and a dressing is applied to the site of venous puncture. In selected cases, blood is followed by such fluids as may be prescribed by the attending physician.

When blood transfusion is to be carried out during operation, and especially when it is anticipated that there may be considerable loss of blood during operation and that some difficulty may be encountered at that time or thereafter in inserting the needle into a collapsed or partially collapsed vein, we find that it facilitates the procedure to mark the location of veins by using a dye on the skin overlying them. This is especially true when, because of the position of the patient on the operating table and the style of draping, it is imperative that veins in the ankle or back of the hand be used. When speed is a factor in drawing and administering the blood, it is customary at the clinic to have one person start the intravenous administration of saline solution while another is

drawing the blood. In some instances, especially in operative cases when veins are more or less collapsed, the flow of blood is slowed too much by the smallness of the vein, especially until after 100 c.c. or more of blood have been given. In such instances, we find the use of a small handroller a great help in increasing the rate of blood flow through the needle. The rubber tubing adjacent to the needle is laid on a hard, flat surface and steadied with the fingers of one hand; with the other hand the roller is pressed against the tubing with a motion that gradually compresses the tubing as the roller approaches the needle. By thus forcing the citrated blood along the tube, one can introduce blood under otherwise difficult circumstances. In some cases, of course, it is necessary to incise the skin, in order to expose the vein and to introduce the needle or cannula directly. It is well to save the vein if possible, as it may be necessary to use it again. This is especially true for patients with some chronic disease who may require subsequent transfusions. Not infrequently it is necessary to use venesection for children, although for infants and for very young children one may transfuse through the fontanel into the longitudinal sinus or use the external jugular vein. The technic employed in entering the fontanel must be surgically aseptic, as there is always a possibility of a complication arising.

When many transfusions are being called for, we find it expedient to have certain forms filled out and sent to the transfusion room. On the reverse side of the form the technic and results of the transfusion are recorded by the administrator or by the person who supervises the giving of the transfusion. In order that there may be uniformity in naming the recipient's vein that is used, an illustration is made which is posted in a convenient place where it may be referred to by those who are administering the blood.

From January 1, 1933, to July 1, 1934, 1,331 blood transfusions were given and, for all except a few, the indirect citrate method was employed.²¹ Blood was supplied by 695 professional donors and by 636 non-professional donors. In case of emergency, when it was impossible to obtain flocculation tests on relatives, professional donors were called in spite of the fact that the non-professional donors were in the proper blood

group. One hundred thirty of the recipients were less than fifteen years of age.

For the nine months preceding July 1, 1934, information regarding the occurrence or nonoccurrence of immediate or subsequent untoward reaction to the introduction of blood was obtained, records of which were kept for 655 transfusions. One hundred fourteen of the transfusions were pre-operative, fifty-seven were carried on during the course of the operation, 294 were postoperative, and 190 were given to non-surgical patients. Eighty-four subsequent reactions were recorded, twenty-two of which might fairly be attributable to causes other than to transfusions. Of the remaining sixty-two reactions, nineteen were characterized by rise in temperature, thirty-three by chills and fever, and ten were atypical. One of these was characterized by an exacerbation of an old phlebitis and another by aching of muscles which lasted somewhat more than an hour. Untoward reactions attributable to transfusion occurred in 9.2 per cent of cases.

BIBLIOGRAPHY

1. Agote, L.: Nuevo procedimiento para la transfusión de sangre. *An. d. Inst. mod. de clin. méd.*, Buenos Aires, 1, no. 1 and 3, 1915.
2. Ashby, Winifred: The determination of the length of life of transfused blood corpuscles in man. *Jour. Exper. Med.*, 29:267-281, (March) 1919.
3. Busman, G. J.: Rubber tubing as a factor in reaction to the blood transfusion. *Jour. Lab. and Clin. Med.*, 5:693-699, (August) 1920.
4. Crile, G. W.: Personal communication to the authors.
5. Giffin, H. Z., and Haines, S. F.: A review of a group of professional donors. *Jour. Am. Med. Assn.*, 81:532-535, (Aug. 18) 1923.
6. Giffin, H. Z., and Watkins, C. H.: Treatment of secondary anemia. *Jour. Am. Med. Assn.*, 95:587-592, (Aug. 23) 1930.
7. Goss, H. L.: Effect of blood transfusion on the retinitis of pernicious anemia. *Am. Jour. Ophthal.*, 6:661-664, (August) 1923.
8. Hartwell, J. A.: A consideration of the various methods of blood transfusion and its value. *New York State Jour. Med.*, 14:535-541, (November) 1914.
9. Hoffman, M. W., and Habein, H. C.: Transfusion of citrated blood. *Jour. Am. Med. Assn.*, 76:358-360, (Feb. 5) 1921.
10. Hunt, V. C.: Reaction following blood transfusion by the sodium citrate method. *Texas State Jour. Med.*, 14:192-195, (September) 1918.
11. Hustin, A.: Principe d'une nouvelle méthode de transfusion muqueuse. *Jour. Méd. de Bruxelles*, 12:436-439, 1914.
12. Keith, N. M.: Intravenous medication; physiologic principles and therapeutic applications. *Jour. Am. Med. Assn.*, 93:1517-1522, (Nov. 16) 1929.
13. Lewisohn, Richard: A new and greatly simplified method of blood transfusion. A preliminary report. *Med. Rec.*, 87:141-142, (Jan. 23) 1915.
14. Lewisohn, Richard: Blood transfusion by the citrate method. *Surg., Gynec. and Obst.*, 21:37-47 (July) 1915.
15. Lewisohn, Richard: Chills following transfusion of blood. *Jour. Am. Med. Assn.*, 80:247-249, (Jan. 27) 1923.
16. Lewisohn, R.: Personal communication to the authors.
17. Lewisohn, Richard, and Rosenthal, Nathan: Prevention of chills following transfusion of citrated blood. *Jour. Am. Med. Assn.*, 100:466-469, (Feb. 18) 1933.
18. Lillie, H. I.: General sepsis of otitic origin: treatment by blood transfusion and germicidal dye. *Arch. Otolaryngol.*, 7:30-40, (January) 1928.
19. Lundy, J. S., and Tovell, R. M.: Annual report of the section on anesthesia for 1932. *Anesthesia records and*

- blood transfusions. *Proc. Staff Meetings of Mayo Clinic*, 8:646-652, (Oct. 25) 1933.
20. Lundy, J. S.: Blood transfusion. *Surg. Clin. N. Amer.*, 14:721-727, (June) 1934.
 21. Lundy, J. S., and Tovell, R. M.: Annual report for 1933 of the Section on Anesthesia and blood transfusion of the Mayo Clinic: including data on the use of anesthetic agents and methods from 1924 to 1933 inclusive. *Proc. Staff Meetings of Mayo Clinic*, 9:221-240, (April 18) 1934.
 22. McGrath, B. F.: A simple instrument for transfusions. *Jour. Am. Med. Assn.*, 62:40, (Jan. 3) 1914.
 23. McGrath, B. F.: A simple apparatus for transfusion by the aspiration-injection method. *Surg., Gynec. and Obst.*, 18:376-377, (March) 1914.
 24. McGrath, B. F.: Vascular suture in transfusion: a simple device to facilitate the work. *Jour. Am. Med. Assn.*, 62:1326-1327, (April 25) 1914.
 25. Mann, F. C.: Further experimental study of surgical shock. *Jour. Am. Med. Assn.*, 71:1184-1188, (Oct. 12) 1918.
 26. Mann, F. C.: Experimental surgical shock. V. The treatment of the condition of low blood pressure which follows exposure of the abdominal viscera. *Am. Jour. Physiol.*, 50:86-101, (Oct. 1) 1919.
 27. Mayo, C. H.: Personal communication to the authors.
 28. Pemberton, J. de J.: Blood transfusion. *Surg., Gynec. and Obst.*, 28:262-276, (March) 1919.
 29. Pemberton, J. de J.: Practical consideration of the dangers associated with blood transfusion. *Jour. Iowa State Med. Soc.*, 10:170-173, (June) 1920.
 30. Rueck, G. A.: Transfusion of blood by the gravitation method. *Med. Rec.*, 87:354-355, (Feb. 27) 1915.
 31. Sanford, A. H.: Iso-agglutination groups: a diagram showing their interrelation. *Jour. Am. Med. Assn.*, 67:808-809, (Sept. 9) 1916.
 32. Sanford, A. H.: Selection of the donor for transfusion. *Jour.-Lancet*, 37:698-701, (Nov. 1) 1917.
 33. Sanford, A. H.: A modification of the Moss method of determining isohemagglutination groups. *Jour. Am. Med. Assn.*, 70:1221-1223, (April 27) 1918.
 34. Sanford, A. H.: Blood transfusion. Indications for its use; methods of selecting donors; and a brief consideration of technic. *Med. Clin. N. Amer.*, 3:801-819, (November) 1919.
 35. Sanford, A. H.: Blood groups. *Minnesota Med.*, 11:755, (November) 1928.
 36. Unger, L. J.: A new method of syringe transfusion. *Jour. Am. Med. Assn.*, 64:582-584, (Feb. 13) 1915.
 37. Unger, L. J.: Transfusion of unmodified blood. *Jour. Am. Med. Assn.*, 69:2159-2165, (Dec. 29) 1917.
 38. Weil, Richard: Sodium citrate in the transfusion of blood. *Jour. Am. Med. Assn.*, 64:425-426, (Jan. 30) 1915.

DEMONSTRATION OF THE RELIEF OF THE ENDOMETRIUM WITH THORIUM HYDROXIDE SOLS*

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GRAND RAPIDS, MICHIGAN

The practical value of the details of the interior of the uterus has long been appreciated. Endoscopic examination has not been generally used on account of difficulties of technic and interpretation. For several years we have been attempting to find a medium satisfactory for the radiological diagnosis of lesions in the genital tract. The media used to date, particularly the iodized oils, have given only a silhouette of the cavity, distended by pressure, in which fine detail is entirely lacking.

In 1933 Guttman and Stahler published reports of the use of a thorium dioxide sol for this purpose and made a number of important observations. The medium used was considered too acid, having a Ph value of approximately 3. Their solution was employed in a few cases with the production of satisfactory shadows. There was, however, considerable irritation from the product. It was therefore considered advisable to attempt the development of a more satisfactory medium. Thorium was selected because of its high density and low toxicity. After considerable trial, it was found that a colloidal suspension of thorium hydroxide could be made by peptizing it with an appropriate amount of thorium nitrate solution. This was prepared by the precipitation of the hydroxide by addition of dilute ammonium carbonate solution to a dilute solution of thorium nitrate. This gave a floccu-

lent white precipitate which was allowed to settle, washed, the required amount of thorium nitrate added, and then concentrated by boiling to the desired strength. The solution so obtained is opalescent in appearance and thin enough to be drawn through a small cannula with ease. It has a Ph value of approximately 6.0. It coagulates and adheres to a surface when coming in contact with dilute alkalis or mucus. The film deposited in this manner is sufficiently opaque to the x-ray to give a satisfactory demonstration of the relief of the endometrium. The deposited material does not remain in place long but is soon loosened, apparently by secretion from the mucous surface, and expelled.

The technic of injection is simple and requires a minimum of apparatus. The patient is placed in stirrups and the usual vaginal preparation with soap and water carried out. Bi-manual examination is made and pregnancy and pelvic inflammatory disease excluded. A large bivalve speculum is in-

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sented, the cervix cleansed with alcohol and dried and the posterior lip of the cervix grasped with a tenaculum. It is wise to pass a sound or small dilator through the cervix

tion following this is comparable to that seen after lipiodol injection and less marked than that produced by the thorium dioxide preparation. After injection the fundus is

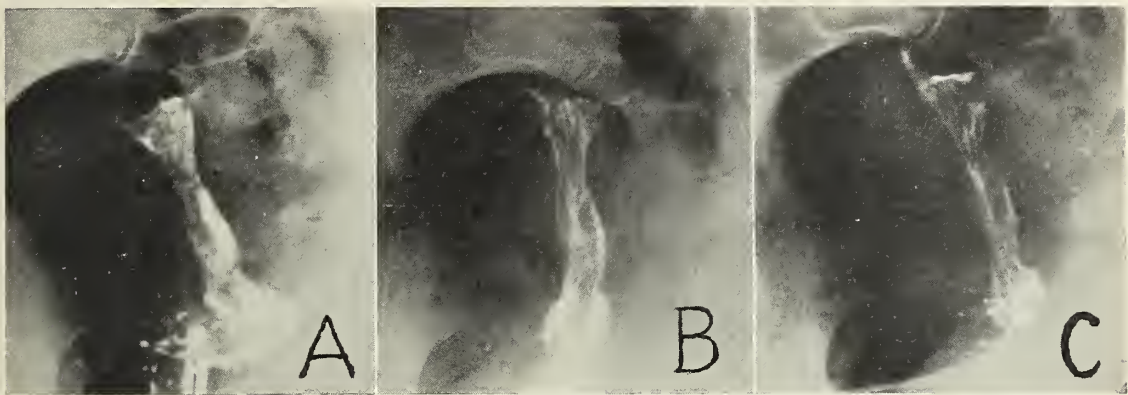


Fig. 1. Menstrual changes in patient with normal twenty-eight day cycle. (A) Three days postmenstrual. (B) Ten days postmenstrual. (C) Premenstrual.

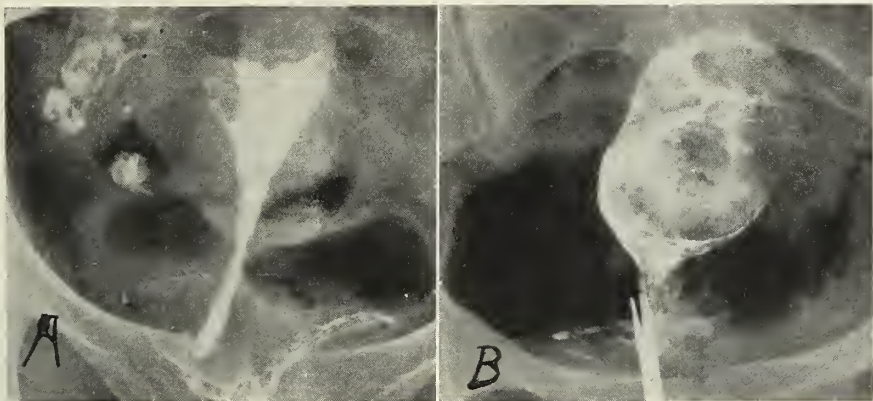


Fig. 2. (A) Filling defect in cornu due to endometrium. (B) Filling defect from retained placenta.

to insure patency and free return of fluid. The solution is drawn into a sterile 20 c.c. syringe to which is attached a small calibre cannula. Be sure to expel all air from the syringe and cannula. The cannula is then passed through the cervix into the fundus of the uterus and injection is made very slowly, turning its tip from side to side and moving it back and forth so that the solution is well distributed over the interior of the cavity, making sure that there is a free return of any excess of fluid around the canula. This is necessary to avoid forcing the contrast material through the tubes. In some instances small amounts pass through the tubes in spite of this precaution, especially in cases of retrodisplacement. The reac-

massaged a few times with the hand to expel any excess of fluid. The excess is then wiped from the vaginal vault with a sponge and the speculum removed, leaving the tenaculum in place. An antero-posterior view is then taken, using the Potter-Bucky diaphragm, and the film developed. Occasionally it is necessary to inject more solution to obtain a satisfactory shadow. If the shadow is too dense to give good detail, due to retention of excess of fluid, the patient is allowed to get up and walk about for a few minutes. The excess usually is expelled by this. When a satisfactory shadow has been obtained, right and left obliques and postero-anterior views are taken. It has been found advantageous to use moderate traction on

the tenaculum while taking the postero-anterior view in order to straighten the uterus as much as possible.

Films taken in this manner produce characteristic shadows by the following mech-

mottling. There is a corresponding decrease in the number of folds and their longitudinal arrangement becomes more distinct. Hyperplasia produces an unusual exaggeration of the markings, accompanied by

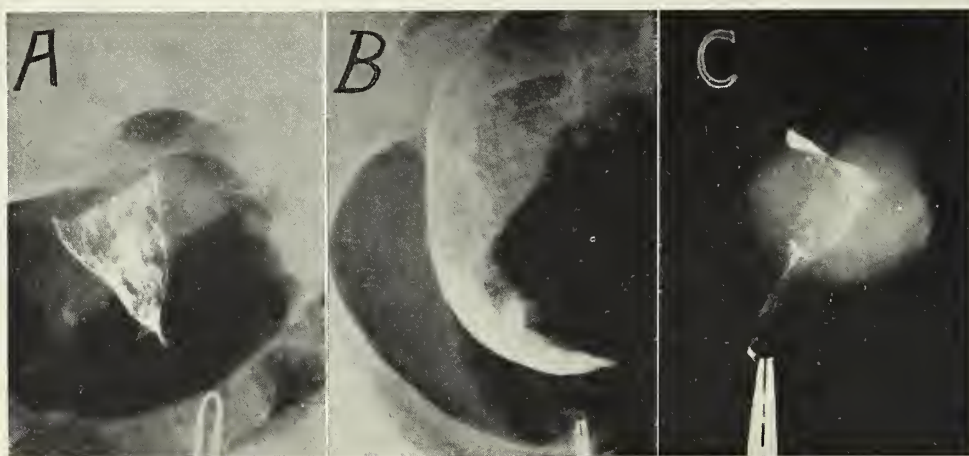


Fig. 3. (A) Hyperplasia. (B) Distortion from large submucous fibroid. (C) Filling defect from small submucous fibroid. (Extirpated specimen.)

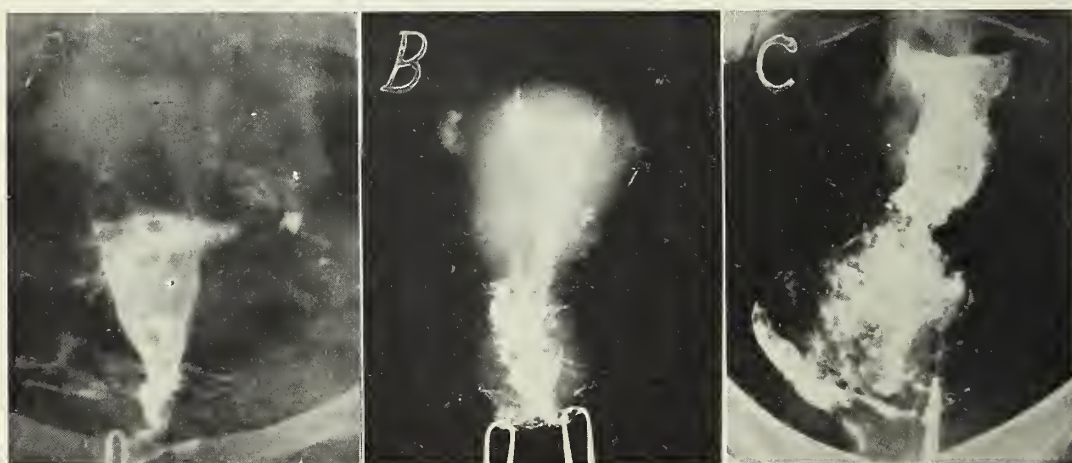


Fig. 4. Hysteroscograms of carcinomas. (A) Niche produced by early carcinoma at internal os. Annular shadows produced by two benign polyps. (B) Deeply ulcerating cervical carcinoma. (Extirpated specimen.) (C) Carcinoma of cervix. Deep ulceration and extension almost to fundus.

anism: The contour of the uterine cavity is outlined clearly; the relief of the mucous membrane produces a latticed appearance due to the deposit of the material in the crevices between the folds in thicker layers than on the summit of the folds. In films taken within the first few days postmenstrual, they present a finely mottled appearance due to the small size of the folds. As the mucous membrane thickens, the folds become progressively larger and the crevices deeper, producing the appearance of coarser

marked increase in width and a decrease in the number of folds. Changes produced by submucous fibroids are easily interpreted. The protrusion of the fibroids into the uterine cavity causes a filling defect not entirely devoid of markings as a rule, but covered by a few fine markings where the material is deposited in the very shallow folds of the over-stretched endometrium. A broadened fundus practically equal in all views is found in case of protrusion of submucous fibroids directly downward into the uterine

cavity from the fundus, producing a cup shaped cavity. Other filling defects may be produced by retained products or localized lesions of mucous membrane, such as the endometrioma. They do not present the clean-cut margins produced by fibroids.

Guttman and Stahler drew attention to the fact that a defect in the cornu can be produced by a folding over of the cornu. This artefact can usually be detected by examination of all films taken. Marked localized hyperplasia or other lesions in the region of the cornu can almost completely block out its shadow.

The appearance of decidua is practically identical with that of extreme hyperplasia. The presence, however, of irregular defects produced by retained products of conception and the change of uterine contour from triangular to oval make the diagnosis clear.

The shadows produced by polyps can be explained by the deposit of the material on its surface, forming a complete ring of dense material with clear center. An ulcer produced by malignancy fills with the contrast medium, producing a dense shadow in the center surrounded by a clear zone indicating its elevated margin. In profile a niche is produced as in early malignancy elsewhere. Later malignancy frequently shows numerous deep interlaced crevices due to deeper ulceration and a clear border caused by the elevation of its margin.

The changes incident to the menstrual cycle were followed in some cases. Films were taken two to three days postmenstrual, eight to ten days postmenstrual, and sixteen to eighteen days postmenstrual. The characteristic findings are shown in Figure 1. It is obvious that one must take into account the time of the cycle at which the investigation is made when interpreting films.

Typical findings found in examination of cases of uterine bleeding are shown in Figures 2, 3 and 4.

Practical application: It is our belief that the demonstration of the relief of the endometrium is of definite assistance in the localization and diagnosis of intra-uterine lesions, particularly the smaller ones—small

submucous fibroids, polyps, and early malignancy. It is not proposed to replace diagnostic curettage but to localize the lesion exactly and assist in the diagnosis of certain lesions not easily detected by curettage. It is true that after radiological diagnosis the diagnostic curettage has not always been necessary.

The presence or absence of submucous fibroids is important in the selection of cases with myomas for radiation or operation. It is well known that the submucous fibroid is not favorable for treatment with radium. The difficulty has always been in determining their presence or absence by ordinary examination. Intramural and subserous fibroids can distort the uterine cavity but do not produce filling defects. Even small submucous nodules show clearly. In this way one is able to quite accurately distinguish between those cases favorable for radiation and those requiring surgery.

In respect to carcinomas a method of localizing the lesion has been discussed which shows also its extent and depth of ulceration. This permits the more intelligent selection of cases for surgery or radium therapy. The determination of the extent and exact location of the lesion allows a more accurate application of radium. Greater depth of ulceration shows the danger of fistula formation following radiation.

SUMMARY

A method of radiological diagnosis of intra-uterine lesions by the demonstration of the relief of the endometrium using thorium hydroxide sols has been described. It is particularly applicable to the diagnosis of small and early lesions and is of practical value in the investigation of uterine bleeding and other situations in which small intra-uterine lesions are suspected. It allows more accurate selection of cases for radiation and operative therapy and presents possibilities for the control of radiation therapy.

BIBLIOGRAPHY

Guthmann and Stahler: Fortschritte auf dem Gebiete der Roentgenstrahlen, (February) 1933.

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EDITORIAL

RADIUM AND X-RAY THERAPY

Successful radium and x-ray therapy has labored under the fears on the part of the laity of so-called burns, which fact has militated against its effective use. It must be remembered that both the x-rays and radium are used in desperate cases, in the majority of instances, to treat malignant conditions. These therapeutic agents are of course radical, but so is surgery. Many radiotherapists are timid in the matter of handling these elements owing to the public attitude towards their capacity for harm. In fact, the doctor has not always been accorded the measure of legal protection he so much requires in their effective use.

At the last meeting of the American Radium Society held in Cleveland on June 12, 1934, the following resolutions were adopted:

"WHEREAS, it has been proven that radium and x-rays, when used properly, and in sufficient quantity, is efficient in the treatment of cancer in certain locations, and

"WHEREAS, there is a general fear in the public mind from x-ray or radium burns, which, because of this year, prevents competent radiologists from using sufficient radium or x-ray to produce the best results.

"BE IT RESOLVED, that we as radiologists recognize that in the treatment of malignant disease, it is often necessary to carry the treatment on to the extent of producing a violent reaction in the surrounding tissues, which may cause the skin to peel, and blisters to form, in order to give sufficient treat-

ment to overcome the malignant disease. We believe, therefore, that it is justifiable to produce a second degree radiodermatitis when necessary."

It would seem that in the use of these therapeutic agents as much skill is demanded as is required of a successful surgeon. Unless a physician feels himself thoroughly conversant with the action of radium and x-rays, as well as possessing a good general knowledge of the pathology for which these agents are indicated, it would be better if the treatment of such patients were left entirely to persons possessing such experience and skill.

BASIC EDUCATION

"He that would bring home the wealth of the Indies must carry the wealth of the Indies with him; so it is in traveling—a man must carry knowledge with him if he would bring home knowledge."

This is a quotation familiar to those who have had occasion to use European guide books. The point is well taken. Many travel abroad and return empty because they have taken little or nothing with them.

We would like to make a different application of the metaphor. The person who takes with him a trained and disciplined mind when he makes an excursion into the field of higher education, will bring back greater wealth of knowledge than he who goes abroad to intellectual realms with meagre preparation.

All this is prelude to preparation for professional studies by academic training, the object of which is mental discipline, looking forward to the broader aspects of professional life. Much has been written on the subject of basic sciences as preparatory to the study of the healing art. Those who place a proper value on academic training need no argument to convince them of its importance. Of the candidates who look to the M.D. degree, the majority complete the requirements for Bachelor of Arts or Bachelor of Science before entering upon their professional training. This should be demanded of all candidates no matter what school or cult they may elect. In matters of public and personal health, a certain minimum, included under the term basic science, should be made compulsory by law.

Most persons of culture both within as well as outside of the legal profession would admit that the candidate who enters law

school with a minimum of at least two to four years college training, in subjects basic to law, would make a better lawyer than one admitted to the study of law without such preliminary academic training. The same is true of studies basic to dentistry, or to engineering, architecture, or any other learned profession. The movement for basic education might as well come as a demand on the part of the laity for better doctors, lawyers, dentists, engineers and all others whose professional positions are matter of trust.

THE DOCTOR'S DOLLAR

State tax, realty
County tax, realty
City tax, realty
Personal tax
Income tax, Federal
Gasoline tax, State
Gasoline tax, Federal
Automobile weight tax
Sales tax
Federal Narcotic tax
Medical protective insurance
Old age pensions

Such is the load carried by the average physician before he can realize on his dollar, and now comes a referendum for the third time for a state income tax. Twice the proposition has been voted down by large majorities. Each member of the profession should not only vote but should also use all the influence he can exert against a state income tax.

The income from this special tax has been designated for the support of primary education. It has been stated on competent authority that the wide fluctuations in income would make this a precarious source of revenue for so important a function of the state as education, which should be financed from some more stable source, than possible from an income tax which would mean feast or famine. The problem should be solved in some other way, yet care should be exercised lest the legislature be too much hampered in its effort to meet government needs. The tendency to fix upper limits in taxation has been marked.

The most equitable tax yet devised is the sales tax. It is fair and nondiscriminating. It is, however, likely to be juggled by politicians until it becomes unfair and discrimina-

tory in the effort to get votes or to perpetuate themselves in office.

Income tax would be the logical tax if it were shared by everyone receiving an income. All tax is in a sense income tax inasmuch as a person without an income cannot pay any of the taxes listed above. Yet when there are certain exemptions a large class of the population, over 90 per cent, are freed from the impost and yet may exercise the franchise. The tax should be as democratic as the right to vote and *vice versa*. The sales tax is the only tax that is in accord with this principle.

A state income tax would be only an additional burden on those already carrying the taxation load.

A COMPLICATED PROBLEM

The following paragraph is taken from an article by Newton D. Baker in a recent number of the *Saturday Evening Post*. While this is taken from its context, it is a statement that may be assumed as complete on a subject that is of interest to the medical profession, representing Mr. Hopkins' attitude as reported by a man who from his prominence is entitled to a hearing.

"However, there are already on foot several movements to put such services as hospitalization, nursing, child care and other forms of social benefits into the hands of the Federal Government, to be administered through a central source. Already such suggestions have been urged on Mr. Hopkins. And he has so far wisely refused them on the grounds that he not only hasn't enough money to spend for adequate relief measures, let alone these other exacting bills, but that even if he had enough money his attention would be so diffused and diverted that he could not possibly do justice to any one service, to say nothing of all of them."

THE HISTORY OF MEDICAL PHOTOGRAPHY*

Though various phases of photography may provide work for some and pleasure for others, the chief value of photography has been that of a permanent record and a scientific instrument. Photographic processes in less than a hundred years have become important to many fields of industry, art and science. In medicine alone, photography has become a research tool, a diag-

*Historical editorial on methods and devices that have aided in the development of medical fields.

nostic method and a means of recording data. The applications are as old as the technic itself.

In 1839, four processes of recording images by means of light rays acting upon a sensitive silver plate were announced. One of these developed into modern photographic processes; another was discarded after a short period of popularity; and the others never passed beyond the experimental stage.

Fox Talbot introduced a process of reproducing pictures upon paper saturated with silver chloride. After exposing the paper in a camera for a long period, an image was produced in which darkened areas represented bright portions of the subject and light areas the shadows. The image was rendered permanent by treatment of the paper with a sodium thiosulphate or hot salt solution. A picture was produced from this negative by superimposing it upon a second sensitive paper and exposing to sunlight. The image thus produced represented the subject photographed. In this process, the pictures were permanent and a number could be produced from one negative.

The Talbot process and its modifications were eclipsed for nearly twenty years by the daguerreotype process. The latter gave clearer images and was simpler in operation though it was possible to obtain only one picture from each exposure. A polished plate of silver coated with silver iodide was exposed in a camera, treated with vapor of mercury to bring out the invisible image on the plate and finally fixed in sodium thiosulphate. A picture was thus produced directly on the silver plate. The other two processes introduced in 1839 were the positive process of Bayard and the reflectograph of Breyer.

The process of Daguerre in less than a year spread throughout Europe and to America, providing a means of recording portraits, travel scenes and landscapes, and introducing photography as a new profession. Talbot's process was unable to compete with the daguerreotype for twelve years. By 1851, the use of photographic developers was discovered, glass was substituted for paper in the making of negatives, and sensitive coatings of silver salts suspended in albumen or colloidin were devised.

As soon as new technics in photography were introduced, they were applied not only by professional photographers, but also by an eager group who made scientific appli-

cations of photography. The adaptation of photography to microscopy was the earliest specialization. J. B. Reade of London made magnified, but very imperfect, figures of a flea in 1839. The image, which was projected on silver chloride paper, was fixed in sodium thiosulphate. In France, Alfred Donné, during the same year, made a daguerreotype of the eye of a house fly with the aid of sunlight and a microscope. In the next year, he made other photomicrographs. The optician, Chevalier, at this time, made photomicrographs having a magnification of 145 times.

The early photomicrographs were made with a sun microscope, an instrument which had been designed to project the microscopic field onto a wall or screen. A light-tight box having a movable cassette to carry the sensitive plate was adopted in place of a screen. The optical system and camera were arranged either horizontally or vertically. The enlarged image of a microscopic object was thus projected on the sensitive plate, where it was recorded.

Josef Berres, a Viennese anatomist, was the first to use artificial light for microscopic photography. Using the calcium or "lime" light, he photographed cross-sections of plant tissues. Donné and Foucault, in 1844, published an atlas of microscopic anatomy in which eighty-six drawings were copies of photomicrographs made on daguerreotype plates. A few other workers, such as J. B. Dancer and R. Hodgson, made use of photomicrography. In 1847, as the Talbot paper negative process came into use, Carpenter demonstrated to the British Association a rather extensive series of photomicrographs made on paper. Dancer, in 1853, adapted the wet colloidin process to photomicrography, and from this time, the daguerreotype was less used. Photographs of microscopic objects began to be considered of importance in aiding scientific work. They not only revealed microscopic structures as they were, free from the bias of the individual, but also provided an easy method for measuring small objects. Photomicrography was a difficult technic, however, which demanded of its adherents both a knowledge of microscopy and the ability to make, expose and develop photographic plates. In spite of these difficulties, Huxley and Wenham in England, Gerlach in Germany, Pohl and Wesselsky in Austria among others were ardent photomicrog-

raphers. Gerlach, in 1863, prepared a manual of photomicrographic technic. He further recommended the staining of preparations with carmine solutions.

One of the outstanding photomicrographers of the latter half of the nineteenth century was Major J. J. Woodward of the Army Medical Department, who introduced a number of technical improvements. During the time of his principal activity, the Zeiss Company perfected the apochromatic objective and projection ocular for the microscope. Histological and cytological technics developed and biological stains came into general use. Photography was likewise advanced by the introduction of more efficient developing solutions, of improved emulsions, gelatin plates and celluloid films.

The addition of alkali to developing solutions in 1862 was found to increase the efficiency of these agents. Previously, gallic or pyrogalllic acid solutions had required a longer exposure. Spiller and Crookes found that the addition of hygroscopic salts to the coating of a collodion plate would allow the wet plate to remain usable for several days. Before this time, it had been necessary for a photographer to prepare his plates immediately before using them. In 1864, B. J. Sayce and W. D. Bolton prepared photographic emulsions of silver bromide and collodion which needed only to be poured upon a clean glass to produce a sensitive plate. Though such a process simplified the preparation of plates, it was not until 1871 when R. L. Maddox introduced the use of emulsions of silver bromide and gelatin that an outstanding development occurred. Plates coated with gelatin emulsion, unlike the collodion type, were not wet when exposed and could be prepared long before use. By 1877, the use of dry plates with gelatin emulsions became sufficiently widespread for several English commercial firms to manufacture and sell them. About this same time, it was found that the addition of dyes, such as eosin and erythrosin, to emulsions made it possible to photograph colored subjects in such a way that the shading of the finished picture appeared more natural to the eye. These orthochromatic plates, which were sensitive to blue, green yellow and orange, were followed in 1905 by panchromatic plates, which were sensitive to all colors.

During the eighties when the production of photographic material was becoming commercialized, the flexible celluloid film, the roll film and the portable hand camera were introduced. At this time, new developers, such as hydroquinone, diamine compounds and metol, came into use along with alkaline pyrogalllic acid. In this period when the commercial preparation of material simplified photographic technic, photomicrography came into extensive medical use. Anatomists, pathologists and bacteriologists, such as His, Delafield, Billings and Crookshank, made common use of photomicrographs. They likewise used photography for recording the appearance of gross specimens.

Galton, in 1878, introduced a method of composite photography in which a number of full view portraits of different persons were superimposed to produce photographs of racial, occupational or criminal types. Individual traits were submerged while the common characteristics were emphasized. In 1888, W. Noyes prepared composite photographs outlining facial characteristics of general paresis and melancholia. Though this type of photography has proved transitory, the photography of individual clinical cases has become very important in medical illustrations and records.

Shortly after the standardization of gelatin plates, photographs of the eye had been made by Noyes and Rosenbrugh. Professor Czermak of Perth photographed the larynx with the help of a mirror system. T. R. French of Brooklyn made further studies in 1884 of laryngeal photography and devised a photographic laryngoscope for the purpose. A year previously, L. Brown had photographed the larynx and soft palate of a professional singer and thus produced a series of photographs which showed the larynx during the production of various singing tones. Merrit, in 1885, adapted the laryngoscopic camera of French so that it could be used in making photographs of the cervix of the uterus. Photographs of the retina, external auditory meatus, larynx, vagina and uterus were made by Stein. About 1894, the progress of surgical operations was photographed at Johns Hopkins Hospital in order to record significant phases of surgical technic.

The development of photoengraving methods for the reproduction of illustrations had a significant relationship to the use

of the camera in medicine. Some time after 1880, textbooks began to appear with reproductions of photographs in place of the earlier woodcuts, lithographs or steel engravings. Previously, when photographic illustrations appeared in press, they were the actual photographs pasted into the text, or drawings copied from photographs.

In addition to illustrating publications and forming records, photography had other adaptations, of which the x-ray was of the most importance to medicine. It may be recalled that the x-rays were first discovered by accidental exposure of a photographic plate by Roentgen in 1895. Within a year, the x-ray came into use in the diagnosis of bone fractures and other conditions. Since that time, the use of the x-ray has developed to the extent that this one phase of photography results in the exposure of as many plates or films as any other adaptation of photography. In roentgenology, films came to supplant glass plates because of their ease in handling and storage. Double-coated films with emulsions on both sides of the film to allow greater definition of images for a specific exposure were introduced in 1917.

Physiologists, likewise, came to use photographic technics. Ozolan of Paris photographed the beating heart in 1869. W. G. Thompson procured pictures of heart in systole and diastole. The Lippmann capillary electrometer which was used in the study of action currents of the heart was provided by Marey in 1876 with a device for recording electrical changes on photographic paper. The Einthoven electrocardiograph and the oscillographs of a later date used photographic recording.

An American photographer, Muybridge, over a period of years made an extensive study of locomotion in the horse and other animals. He arranged a series of cameras in a row to be exposed one after another by electrical devices. As a horse walked or cantered by the cameras one to several dozen photographs of succeeding phases of the movement were recorded. A more scientific and equally extensive survey was initiated by the French physiologist, E. J. Marey, in 1882. He devised a camera with a timed revolving shutter which exposed on the same plate pictures of the successive movements of his subjects. A variety of movements in man, birds, insects, fishes and other animals was analyzed into successive

postures with the apparatus. In ten years of study, Marey perfected instruments having moving films and shutters for intermittent exposure. These were the first motion picture cameras. Marey, in France, and Edison and Dickson, in the United States, further perfected the camera and devised a projection apparatus which threw on a screen the moving image. From this time, the cinema camera came to have many uses.

The motion picture camera was adapted to specific medical purposes by Doyen in Paris (1898), who had motion pictures taken of a surgical operation. Walter Chase of Boston introduced the practice into America in 1906. Dickson and Marey independently adapted the cinema camera to the microscope in the mid-nineties. Toward the beginning of the present century, a method of slowing movement was outlined. If photographs were taken at a rapid rate and projected at normal speed, motion was slowed down. Pizon (1904) in studying slowly moving marine animals made intermittent exposures separated by long intervals and projected the pictures at a normal rate, with the result that movement was much quickened. In both France and America, a number of studies were made with this method. The development of embryos, the movement of blood cells, the process of phagocytosis, the growth of tissue cultures, the movement of chromosomes and the contraction of capillaries were studied with this technic. Motion picture films have become an important method of demonstrating and teaching in medicine; these are used along with lantern slides to depict anatomical and embryological concepts, physiological experiments and surgical procedure. They have provided a physiological method whereby pictures of an animal before experimentation serve as a control to those taken afterward.

Among the more recent advances in photography of importance to medicine has been the use of infra red and ultra violet light. The introduction of plates and films adapted to infra red light has resulted in photographic methods for studying the skin. Certain characteristics of skin diseases invisible to the eye or to the ordinary camera are brought out by the use of infra red photographs.

In ordinary photomicrography, the extreme resolution and magnification of ob-

jects are correlated with the wave length of the light used for illumination. Red light is not as efficient as blue or violet light. Likewise, visible light does not give the resolution that ultra violet does. Ultra violet light, however, does not pass through glass, so that special microscopic lenses, slides and cover glasses are required. Kohler of the Zeiss works in 1904 produced lens systems of fused quartz which would permit photomicrography with ultra violet light and allow resolution and magnification twice that of the ordinary microscopes.

A relatively recent device for medical use is the "gastro-photor" which was invented in 1929. This instrument consists of a stomach tube having two very small cameras with a light between. When the tube is passed into the empty stomach and the latter is inflated with air, eight minute stereoscopic photographs may be produced. With the use of this camera, about three-quarters of the mucous membrane of the stomach may be photographed and the extent and location of gastric ulcers demonstrated.

Throughout the period of practical photography, the extent of medical application has been limited by the technical difficulties of method. As simpler methods of photography have been advanced, more physicians have used them in producing records and illustrations for medical communication. Many hospitals and research institutions have departments of clinical photography which are serving to increase the use of photographic methods. Through these, photomicrography, cinematography and other methods requiring skilled technical knowledge are being increasingly adapted to medical purposes.

W. T. D.

COMPETENT MEDICAL WRITERS

(JOURNAL AMERICAN MEDICAL ASSOCIATION)

In the field of medical science, many men have gained note by their ability to express themselves in good English succinctly, rhythmically and accurately. The opportunity is available, for every one who cares to take the trouble and the time, to perform competently in the field of medical letters. Experts assert that there are hardly a hundred competent medical writers in our country today; some authorities insist that there are hardly more than ten or twelve. In the field of preparation for sound literary expression, particularly, preliminary education to medical training seems to be failing miserably.



The
Editor's
Easy
Chair

THE PRINCIPLES OF MEDICAL
ETHICS

A few weeks ago the secretary of the American Medical Association in addressing a group of physicians deplored the fact that two or three county societies had drafted their own codes of medical ethics to supplant the system of ethics of the American Medical Association. The allusion leads us to deliberate on what should characterize a system of ethics. In the first place a code of ethics must have a survival value, by which we mean it must make not only for the good of the group adopting it but for the benefit of all who have any sort of relation with that group. It must deal with principles rather than specific cases. The greatest system of ethics is that propounded by the great Galilean nineteen centuries ago. Many groups or sects have laid claim to the ethics proclaimed by Jesus, including socialist, communist, capitalist, individualist and what not, yet he belonged to none of them. His concern was human character and it is character that produces civilization of the highest order. A deterioration in individual character on any large scale results in the downfall of the group or nation.

* * *

It is not our purpose to indulge in anything like a hortatory homily. We would say, however, that the ethics of the medical profession has a long history. It has been tried throughout the centuries from the time of Hippocrates, and where followed, good has resulted. The ethics of Hippocrates may be summarized briefly—(1) be reasonable in fees, and, if necessary, render service without remuneration; (2) call in a consultant when in difficulty; (3) respect and honor one's teacher and endeavor to live a life free from reproach; (4) do not cause abortion nor give a poison; (5) observe secrecy in regard to information acquired professionally; (6) abstain from every voluntary act of mischief and corruption; (7) avoid ostentation in dress or manner and refrain from advertising.

Charles Singer, the noted medical historian, is of the opinion that the so-called Hippocratic oath was written during the Roman Period, at which time surgery was in disrepute, which accounts for the interpolation of the admonition regarding cutting for stone. The oldest form of oath written during the Christian era (circa tenth or eleventh century) does not contain the injunction.

* * *

The principles of ethics of the American Medical Association may be traced in essentials to the work on ethics as applied to medicine by Thomas Percival,* a scholarly English physician (1740-1803). Percival was the victim of poor vision and headaches; evidently a bad case of astigmatism. The handicap probably induced him to embrace the philosophic rather than the practical aspects of medicine. He was the contemporary and personal friend of a number of prominent physicians such as John Hunter, Heberden and Withering of digitalis fame. John Brown, the famous Scottish physician and author, writes of Percival's work in his *Horæ Subsecivæ*, "Dr. Percival's Ethics is a classical book in its best sense; sensible, sound, temperate, clear thoughts, conveyed in natural, clear persuasive language . . . There is a great deal of stiffness of the old school about the doctor; he speaks in knee breeches and buckles, with a powdered wig and an interminable silk waist-coat, a gold headed cane at his side, and his cocked hat under his arm. To us, however, this is a great charm of the book and of such books."

Percival attended Edinburgh at a time when a number of persons later famous in American medicine also pursued their medical education at Edinburgh University. No doubt many of the pioneers in medicine here were influenced by Percival, much as at an earlier time, the framers of the Declaration of Independence were influenced by Locke's work on Civil Government.

The American Medical Association was organized in New York City in 1846 by Nathan Smith Davis. The chief item of business, at what was the first real meeting held in Philadelphia in 1847, was the formulation of a code of ethics. A prefatory note of the code of ethics adopted in May of that year goes on to state that of the great num-

ber of codes of ethics adopted by different medical societies of the United States, it was found that they were all based upon that of Dr. Percival and that the phrases of this writer were to a considerable extent preserved in all of them. Continuing, "believing that language so often examined and adopted, must possess the greatest of merits for such a document as the present, clearness and precision and having no ambition for the honors of authorship, the committee which prepared this code have followed a similar course and have carefully preserved the words of Percival wherever they convey the precepts it is wished to inculcate."

* * *

At the annual meeting of the American Medical Association held in New Orleans in 1903 the House of Delegates revised the old code, changing the title to *Principles of Medical Ethics* of the American Medical Association. Another revision was made in 1912. Copy of the *Principles of Medical Ethics* may be procured at a nominal price by addressing the headquarters of the Association in Chicago.

It will be seen then that the Principles of Ethics is not a matter of a day. They have an ancient and honorable lineage and their survival value has been proven. We are reminded of the early settlers of New York who are said to have adopted the Ten Commandments as their rule of conduct, until they had time to invent a better. Ours is virtually a development coincident with the art of healing itself.

THANKSGIVING

Weel, it's comin' time th' noo, when we'll tak a day
or two,
A cuttin' up some pranks, an' a'gi'in' o' oor thanks,
We'll hae a feast an' sing, mair lithesome than a
King,
An we'll tell th' multitude, that we're in a gratefu'
mood.

Ah! Ye ha'e na much th' day, tae be thankfu' for,
ye say,
Weel, sometimes a wee portion is michty as a fortune,
Yer health is a' ye need, for tae do a kindly deed.
Sae yer wee bit "bill o' fare" is yer biggest bit o'
care.

Ye canna get tae Heaven on yer wealth or real estate,
An' yer tax is gettin' fatter. It really doesna matter
If yer politicians boo. They're nae better aff than
you.
Sae be thankfu' noo ma frien', for it's turkey time
again.

—WEELUM.

*Percival's Medical Ethics edited by C. D. Leake. Baltimore: The Williams and Wilkins Company, 1927. A very interesting account of the evolution of the principles of medical ethics.

MEDICAL MEN FOR THINGS MEDICAL

"The principle that medical men should be the ones to exercise control over medical service is almost axiomatic. Yet there is confusion of thought where there could be straight thinking if all the facts were brought out and faced.

"There are those who would virtually make the physician an employee of the state. They fail to recognize the utter incompatibility between the American political system and the methods of truly professional men.

"There are those who complain about the scarcity of physicians. Yet it is a fact that while England has one doctor for 1,490 persons, France one for 1,690, and Sweden one for 2,890, there is in the United States one physician for every 780 persons.

"There are those who denounce our hospitals on the score of high charges for service, but the truth is that the cost per day of a hospital room with meals and the day and night personal ministrations required by an invalid is usually less than a well person would pay for mere room and meals in a first-class hotel.

"There are those who would like to let down the bars to self-medication. Yet the fact is that during the last few generations the average span of human life has been extended ten years, chiefly through the discoveries of medical science.

"Physicians know these things. They spend years acquiring an education on the care and repair of the most marvelous mechanism on earth—the human body. But they would readily admit that this education does not qualify them for telling railroad executives how to solve transportation problems or impresarios how to stage an opera. The work of the world needs many kinds of specialized knowledge, but certain it is that each field of work will be best managed by those who know it best."—From Mead Johnson & Company's announcement in Hygeia.

THE BEST THINGS OF LIFE

(Dean R. W. Inge)

What are the most precious gifts for which an old man, looking back on his life, ought to thank God? The Greeks put health first. I have never known a day's serious illness in my life. . . . But I have known so many men and women who have triumphed over this handicap that I could not rank health as the best thing in life. Some kind of recognition and encouragement is, I think, almost essential to happiness, except for a few proud or heroic natures. I have certainly had nothing to complain of under this head. But I have not the slightest doubt that domestic happiness is the greatest of all gifts; next to that "wisdom," for which Solomon prayed, and which, I suppose, may be defined as a right judgment of the relative value of things. The blessings which God has given me in my wife and children are in a different class from all other sources of happiness and pleasure that have come to me. At a time when many persons are not ashamed to assert that marriage is generally a failure it is permissible to give this personal testimony. And though it may be my private opinion that no one else has been quite so fortunate as myself, I shall not quarrel with the countless other happy couples who think that they have been similarly favored.

ANNUAL CONFERENCE OF SECRETARIES
OF CONSTITUENT STATE MEDICAL
ASSOCIATIONS

This annual conference took place on September 21 and 22 at the Palmer House, Chicago. Once a year the secretaries of state medical societies throughout the United States together with the editors of the various state medical journals meet in Chicago and discuss problems that relate more to the social and economic phases of medicine than to scientific medicine itself. This body of secretaries and editors constitute together with representatives from the American Medical Association the publicity department of the medical profession of the United States. The Michigan State Medical Association was represented by President Dr. Richard R. Smith and Acting-Secretary Dr. Burton R. Corbus of Grand Rapids, and the editor.

The meeting was opened with an address of welcome by Dr. J. H. J. Upham, chairman of the Board of Trustees of the American Medical Association. The papers presented at the convention will appear in the near future numbers of the *Bulletin of the American Medical Association*. All Fellows of the Association throughout the United States, but we would particularly stress the members of the Michigan State Medical Association, should read these articles as they appear together with the discussions.

Dr. L. A. Wilkes, executive secretary of the Medical Society of New Jersey, read a very interesting paper on New Jersey's Method of Furnishing Medical Services to the Community. The Centralization and Departmentalization of State Medical Society Activities was the subject of Dr. Oliver J. Fay's address, chairman of the Board of Trustees of Iowa Medical Society. The general trend of discussion was that of furnishing medical care to patients of limited incomes and the indigents who are without income. A paper entitled Medical Emergency Relief, by Dr. Holman Taylor, secretary of the State Medical Association of Texas, dealt with a kindred subject. Dr. Taylor went on to show how during the war physicians whose incomes ranged from \$5,000 to \$25,000 a year, dropped everything in the way of previous practice and enlisted in the service of the nation at remuneration which ranged from \$100 to \$200 a month. They realized the emergency of war and were willing to assume personal sacrifice without any thought of their own interest. The past three or four years found the nation in an emergency which was fully as great as that during the war. The medical profession showed a willingness to do their part. There was, however, a disposition on the part of the community to take the doctors' service for granted; even under the various welfare projects merchants and others supplying basic needs were paid in full for their services and commodities while the doctor, where he was paid at all, was asked to render his service for as low as 50 per cent of his normal fee.

Those from Michigan were impressed by the activities of a number of state medical societies in the matter of furnishing medical care to the indigent. In Michigan this is left to local county units that make contact with the Welfare Departments or through them to the FERA through local channels. The Michigan plan is largely the result of the fact that there is a greater variation between the industrial counties and cities than with those states that are distinctly rural.

Dr. Burton R. Corbus, acting secretary of the Michigan State Medical Society, said that since he had been in attendance at the conference a number of secretaries and editors had asked him what was the fate of the plan worked out by the Committee on Economics of the Michigan State Medical Society. He explained the extent of the work and

research that had been accomplished by Michigan and stated that the House of Delegates at the annual meeting in September had placed the matter of specific plans for medical health service in storage; that the committee was continued and advised to be ready should any action on the part of the state or federal government eventuate to socialize medical practice. He endorsed the study that had been made and spoke of the valuable data that have been assembled as a result of which the State of Michigan was in a condition of preparedness.

Dr. Corbus' statement of the Michigan case brought Dr. A. T. McCormack of Louisville, Kentucky, to his feet. Dr. McCormack spoke approvingly of Michigan's action and stressed the importance of leadership, that he believed the American Medical Association should be on the alert and have definite plans to offer, should the federal government undertake any national scheme of medical service. The medical profession, it was the consensus of opinion, were inclined to be individualists when it comes to the matter of the good of the profession at large and medical care to the population at large. We would get nowhere so long as that attitude prevailed. It was necessary to submerge individual differences and to follow leadership, and the national leader was the national medical association.

Dr. Douglas Singer read an interesting paper on Mental Health, urging that mental hygiene receive greater stress at the hands of those in general practice.

Dr. Morris Fishbein, editor of the American Medical Association Journal, presented a moving picture film which described in a graphic way the activities of the American Medical Association. This film was found to be very interesting and one that could be presented to advantage to county societies. Dr. Fishbein explained that the film would be available to counties making a request for it.

Dr. James S. McLester, president-elect of the American Medical Association, gave a short address in which he stressed the necessity of greater clarity and forcefulness of both written and spoken speech. He emphasized the importance of greater care on the part of doctors in preparing papers to be read before the various medical organizations. Papers, he said, should be written and revised several times. He spoke of the power exercised by a good speaker or essayist who exercised great care in writing and speaking the English language.

Dr. William C. Woodward, director of the Bureau of Legal Medicine and Legislation of the American Medical Association, is always a welcome speaker at these annual conferences. Dr. Woodward stressed the legal aspects and described important legislation, present and prospective.

Some Problems of a State Medical Editor was the subject of Dr. W. E. Bird, editor of the *Delaware State Medical Journal*. This was rather interesting to the writer as he presented a paper on precisely the same subject before this conference three years ago. Dr. Bird, however, stressed different phases of the problems of editing a medical journal. He claimed that it was difficult to get copy for the journal after the first few months following the annual state meeting. This has never been a problem with the editor of the JOURNAL OF THE MICHIGAN STATE MEDICAL SOCIETY. The medical profession of Michigan are prolific writers.

Dr. R. L. Sensenich, a member of the Committee on Legislative Activities of the American Medical Association, presented a very interesting paper, the result of much study and thought, in which he stressed the importance of contacting those in other

occupations to learn their attitude towards the endeavor being made in some quarters to socialize medicine. He advised taking the public into our confidence. The demand for socialization of medical care was to a large extent the result of activities of social workers. However, it was necessary for the medical profession to ascertain just how spontaneous and far-reaching was this desire upon the part of the lay public.

The Educational Possibilities of Scientific Programs at State and County Meetings was the subject of a paper by Dr. Clyde L. Cummer, president of the Ohio State Medical Association. Dr. Cummer dealt with the post-graduate and extension medical instruction in Ohio.

Dr. R. G. Leland, director of the Bureau of Medical Economics of the American Medical Association, discussed at length the subject of Health Insurance in England and Medical Society Plans in the United States. He spoke of the lack of preparedness in England in 1911 when Lloyd George sprung the matter of health insurance. About forty per cent of the British Isles were strongly in favor of it and about sixty per cent were either neutral or opposed. He declared that health insurance in England was in a large measure successful. There was no denying the fact, but the whole British Isles was not larger than one or two of our largest states, a situation which must be considered in attempts to adopt any national system of health insurance in this country. Dr. Leland went on to describe some substitute plans on medical service which had been put into operation in the United States. He gave particular credit to the Wayne County plan of health service which has been described in detail in this JOURNAL and is therefore well known to Michigan readers.

LABORATORY DIAGNOSIS OF AMEBIASIS

Thomas B. Magath, Rochester, Minn. (*Journal A. M. A.*, October 20, 1934), contends that it is evident that the laboratory diagnosis of amebiasis requires special knowledge and skill and should not be attempted except by those adequately trained and with a large measure of experience. The problems involved are quite comparable to those involving diagnosis of tissue. The diagnosis of amebiasis should be made only by those specially qualified. The direct smear method is adequate in the hands of those properly trained in almost all cases but, if doubt exists, one should resort to fixed and stained preparations. Whether one uses formed stools or those resulting from catharsis will depend on the individual problem. Whichever is used, the limitations of the particular method must be clearly recognized. Culture methods should be used in laboratories qualified to identify amebas, but, for the usual routine, cultures are not necessary, provided the examiner thoroughly knows how to make proper direct examinations. The cultural characteristics of various amebas growing in these cultures have yet to be clearly described, and a series of animal experiments to determine the types in a large series is greatly needed. Until the complement fixation method is simplified, it is not suitable for routine tests. Of infestations with *Endameba histolytica*, 75 per cent can be found by examining a single stool following catharsis with magnesium sulphate, whereas only a third of the infestations will be found by examining a single formed stool. It will require eight to ten formed stools to establish the same number of infestations as three stools following catharsis.

MICHIGAN STATE MEDICAL SOCIETY

Proceedings 114th Annual Meeting

Battle Creek, September 11 to 13, 1934

HOUSE OF DELEGATES

Tuesday Morning, September 11, 1934

The House of Delegates of the 114th Annual Meeting of the Michigan State Medical Society convened at the W. K. Kellogg Auditorium in Battle Creek, Michigan, on Tuesday, September 11, 1934, at nine-thirty A. M., with the Speaker, Henry A. Luce, of Detroit, presiding.

The following delegates and alternates were present:

Alpena—F. J. O'Donnell
 Berrien—W. C. Ellet
 Calhoun—C. S. Gorsline, A. T. Hafford
 Chippewa-Mackinac—B. T. Montgomery
 Eaton—A. G. Sheets
 Genesee—George Curry
 Grand Traverse-Leelanau—E. F. Sladek
 Gratiot-Isabella-Clare—T. J. Carney
 Houghton—George M. Waldie
 Huron-Sanilac—David D. McNaughton
 Ingham—L. G. Christian, Karl Brucker
 Jackson—Phillip Riley
 Kalamazoo-Allegan-Van Buren—C. Ten Houten
 Livingston—Harry G. Huntington
 Mason—L. W. Switzer
 Muskegon—Roy H. Holmes
 Oakland—Robert Baker
 Otsego-Montmorency-Crawford-Oscoda-Roscommon-Ogemaw
 C. R. Keyport
 Ontonagon—H. B. Hogue
 Ottawa—A. E. Stickley
 Shiawassee—I. W. Greene
 Tuscola—O. G. Johnson
 Washtenaw—John Wesinger
 Wayne—Wm. J. Cassidy, H. W. Yates, G. C. Penberthy,
 A. E. Catherwood, R. M. McKean, L. J. Hirschman, H. F.
 Dibble, H. W. Plaggemeyer, W. R. Clinton, L. J. Garipey,
 S. A. Flaherty, A. P. Biddle, L. O. Geib, E. D. Spalding,
 L. T. Henderson, C. K. Hasley, Wm. J. Stapleton, Jr., Wm.
 S. Reveno, Roger V. Walker.

The Speaker: Gentlemen, the hour of nine-thirty has now arrived.

Chairman of the Credentials Committee, Dr. Henderson, have you a report?

Dr. L. T. Henderson (Wayne): As Chairman of the Committee on Credentials, Mr. Speaker, I have forty-four seated as delegates in the Michigan State Medical Society's morning session.

The Speaker: If there are no objections, the preliminary report of the Committee on Credentials will be received.

The Secretary: I hold in my hand the signed roll call of forty-four delegates, constituting a quorum of this House. I would suggest that some delegate move that this constitute the roll call of this morning's session, and that any delegates coming in afterward upon signing the roll will be added to that roll call.

Dr. C. S. Gorsline (Calhoun): I make that motion.

Dr. A. E. Catherwood (Wayne): I support the motion.

The Speaker: Those in favor will indicate by saying "aye"; those opposed, "no." It is carried.

I now announce the 114th Annual Meeting of the Michigan State Medical Society duly constituted and open for the transaction of business.

The Vice Speaker, Dr. Frank E. Reeder of Flint, took the chair.

The Vice Speaker: Members of the House of Delegates: A year ago you chose one from your number to be your Speaker. I believe you will agree with me that after his one year in office he has

proven himself thoroughly efficient, and I believe you will agree with me he has been thoroughly sincere, conscientious and has given every ounce of his effort and energy not only for the progress of this organization but for the good of the members of the medical profession throughout the state.

So I feel it is indeed a privilege and a pleasure for me this morning as your Vice Speaker to introduce your Speaker, Dr. Henry A. Luce, who at this time will give his address. (Applause.)

Dr. Henry A. Luce read the Speaker's address.

SPEAKER'S ADDRESS

The 114th Annual Meeting of the Michigan State Medical Society is now entering upon its page of history. The actions of this House of Delegates are awaited with interest by the whole medical profession of the United States. More than that, the actions of this session are of importance to those who are students of the trend of the times. The Michigan State Medical Society has, through its studies of economic and social problems, assumed tremendous responsibilities which are the penalties of leadership.

The Michigan State Medical Society is now in a position of preparedness to meet the changing conditions which threaten. It has arrived at this position through the foresight and courage of its leaders who have been willing to accept adverse criticism in order that Michigan might be in a position to protect the health of its citizens from too wide a detour to the left. This criticism has been sincere but nevertheless painful.

At present it can well afford to assume a waiting policy; at the same time promulgating its position with reference to medical service.

More than two years ago it laid down principles of Medical Service which have been used as standards for all other organized medical groups; namely, 1st—Free choice of physician. 2nd—Control of medical service in the hands of medical organization. 3rd—Limitation of benefits to medical service. To this might be added a 4th; namely, it is the duty, right and privilege in so far as possible of each and every citizen to provide for his own medical service and that of his dependents. Medical service is here considered in both curative and preventive phases.

Adequate medical service to a country is the obligation of the medical profession. The medical societies of Michigan are meeting this problem by various plans, based on accepted principles.

If the governmental agencies will keep hands off, the medical profession will work out the problem along lines based on American ideals.

Except as has hitherto been provided for by Boards of Health and United States Public Health Service, any attempt to encourage the lay population of this country in the belief that the care of its health is largely the function and responsibility of the government is pernicious, dangerous and destructive to progress.

A fundamental weakness in our country today is the disposition of many to assume that someone else will provide the umbrellas every time it rains.

The man who pushes a junk wagon to make his living by his own individual effort is a better type of citizen than the one who gladly is the recipient of dole.

Many changes seem inevitable in the care of the public health. The Michigan State Medical Society is prepared to meet those changes. A tentative plan has been prepared ready for use should occasion require. Many changes may be the result of legislative enactment. The political power of the medical society must be exerted along constructive lines. Whether the medical society likes it or not, it is an obligation that cannot be sidestepped. The medical profession alone knows how health measures should be administered and it is the obligation of the society to exercise its rights and duties. The legislative branch of our state government must be told in no uncertain terms that the medical society insists on adequate medical care of all citizens based upon the fundamental principles of our government and our profession and laid down in the principles promulgated by our Society.

This legislative work is the duty of each and every member of the Society—not to be left to the Legislative Committee alone.

Michigan State Medical Society's actions should be based upon the principles which were laid down in the organization of our government and our profession.

The medical profession today is one of the few remaining groups that cling to the traditions for which blood has been shed from Lexington to the Argonne. It begs to be let alone, to carry on according to its honorable principles without interference from bureaucratic and governmental infringements.

The medical profession of Michigan still believes in the American conception of human rights and liberties, which have been the foundation and inspiration of progress.

The ship of idealism founders without the compass of experience.

An illustration of the value placed upon medical services by governmental agencies is the medical department of the Federal Emergency Relief Administration. Medical service is given by the profession at actual cost. The labor and material furnished by other departments contain a measure of fair profit.

The CWA and FERA have given \$180,000 for a nine hole golf course up in Keweenaw district, the most northerly part of Michigan, 35 miles from the nearest large center of population; on the other hand, the FERA only allows \$15.00 for the professional services and responsibility for the obstetrical care of mother and child during that trying period in the lives of those two individuals. An hourly rate of less than fifty cents for the professionally trained physician!

Adequate medical care cannot be ascertained by percentage, like the amount of cream in milk. No rubber stamp or standardized prescription is comparable to the confidence and human element represented by the family-physician-patient relationship.

Those who have practiced long in the medical profession know that many new remedies have been developed to treat the sick. Many a suggested remedy has proved worse than the disease. Let us not treat an economic illness with any remedy that may prove dangerous. Time-tested and worth-proven principles governing treatment of the physically and mentally ill must not be supplanted by paper formulae and standardized prescription writing.

We need not be in a great hurry to solve the problems here confronting the House of Delegates. Woodrow Wilson said at Pittsburgh, January 29, 1916: "One cool judgment is worth a thousand hasty councils. The thing to do is to supply light and not heat. At any rate, if it is the heat, it ought to be white heat and not sputter, because sputtering heat is apt to spread the fire." Thomas Jefferson said: "We must be contented to travel towards perfection step by step."

Members of the medical profession demand the right to fail or succeed by their own individual efforts. The medical man is an individualist. The contributions made to medical science have been largely the result of an individual's courage to think and act independently. If William Jennings Bryan were alive today and a member of the medical profession, he might well say: "You shall not crucify the practice of medicine on the cross of socialism. You shall not press down upon the brow of Æsculapius a crown of regimentation thorns."

This session is now ready for the consideration of such business as may properly come before it. Careful, serious deliberation must be made of all subjects. Again to quote from President Wilson: "If there is any heat at all, it ought to be that warmth of heart which makes every man thrust aside his own personal feelings, his own personal interests, and take thought of the welfare and benefit of others."

The Vice Speaker: The Speaker's address will be referred to the reference committee on Society Affairs.

The Speaker resumed the chair.

The Speaker: The next order of business is the President's address. Dr. George L. LeFevre.

The audience arose and applauded.

President LeFevre: The House of Delegates—Gentlemen: The Speaker has given you a very constructive talk on a subject in which we are all very much interested. It affects each and every one of us. I will not keep you very long because we have a lot to do.

President LeFevre read his prepared address.

PRESIDENT'S ADDRESS

During the years I have been associated with the active government of our State Society, I know of no convention upon the shoulders of which has been thrust as much responsibility. In no small measure the future welfare of our profession depends on your action at this and future meetings. Careful consideration has to be given the questions coming before this convention. Remember that as delegates you represent your fellow members, and as such, in all matters coming before this House, you should relinquish your personal opinions and ambitions and give heed to the wishes and needs of the members and community you represent. Let me mention in particular the matter of the Mutual Health Service. During this meeting you will be asked to vote upon this plan. Before you cast that vote, be sure you are thoroughly informed upon the matter, both pro and con. Then consider the effect, both good and bad, upon the profession and the public, of such a plan, and pass your judgment accordingly.

Precipitous action and snap judgment should be avoided. Before any definite action is recorded, be sure you are in possession of all of the facts that are involved. We are in the midst of changing times. What may seem right today may be wrong a few months hence. For this reason be alert to not assume an irrevocable position.

Let me say a word about the government of the Society and its component parts. Each year a set of officers, councilors and delegates are elected. Presumably they attain these offices because of the confidence the members place in them. After they are so elected, it is fair and wise that that confidence should be respected. Do not restrict or restrain their action. You can be certain that they will at all times act for the best interests of the Society and its members. Their appointment of committees or other officers will be based upon dependable information and facts. Any restricting action on the part of the membership hinders the progress of their work.

In the selection of a Secretary for the State or-

ganization, the Council is wisely deferring final action until it can find the best qualified man. I can assure you that knowing the exacting requirements of that officer, better than any member or delegate, your Council will make a wise choice. I urge that you permit the Council to have a free hand in this matter and that this House refrain from dictating to the Council.

I am deeply conscious of the fact that many of the county societies are very poorly informed about the activities of the State Society. This condition might result in much discord due to misinformation. The remedy for this condition lies with you men. The various matters which are discussed during the meeting should be thoroughly discussed by the County Societies and the delegates should impart instructive comments and urge unity of action, and wholehearted support of all approved activities. Independent action defeats many of our endeavors. Much help along these lines would come from a more diligent reading of that portion of *THE JOURNAL* devoted to the activities of the Council and Committees.

The House of Delegates is no place in which to engage in matters of controversy that are of local origin. Your actions should be in the interest of the whole state and not those of any small region. Counties must solve their own internal problems. Help in this direction may often be needed from the State officers and committees, and they will always be ready to be of assistance.

There is often much work to be done concerning legislative matters. Such problems are planned by the State Legislative Committee, and their plan of action is well outlined. It is well that you be guided by their recommendations and those of the Council. In this way the efforts of the entire state will be directed from a central committee, which, you will agree, will accomplish more than independent action.

With these few remarks of advice I wish you a most profitable meeting. The officers of the Society and myself want you to know that we deeply appreciate the time and effort you have spent in behalf of our Society and we feel sure that what constructive changes have been made in the past few years are due in no small part to the activities of the House of Delegates.

The Speaker: The President's address will be referred to the Committee on Society Affairs, of which Dr. George Curry, Genesee, is Chairman.

The next order of business is the President-Elect's address, by Dr. Richard R. Smith.

The audience arose and applauded.

ADDRESS OF PRESIDENT-ELECT

President-Elect Smith: As incoming President, I wish merely to extend my greetings. As the Speaker and the President have said so well the things I might say, I am merely going to endorse all they have said in regard to this meeting. I am sure everybody has come to this meeting with the feeling that this is perhaps the most important meeting ever held by the House of Delegates. There are two matters which are of special interest and importance. You have before you the report of the Committee on Economics, upon which you will be asked to make a decision. This situation is entirely in your hands.

You will remember that you appointed a committee to investigate this problem, and they have done their work thoroughly and well. I would call your attention to the fact also that this is an extremely good committee. They have acted wisely, they have given it lots of thought, and they are now proposing to you a plan for your consideration which perhaps will be the way out of our present difficulties.

You undoubtedly have given it a lot of consideration. You will hear debates on the floor pro and con on this plan. One can only ask that you take into consideration all of the factors which are involved and not pass in any prejudiced way upon the question involved.

Of still more fundamental importance, it seems to me, is the report of the Committee on Postgraduate Education and the need of the practitioner. It is more fundamental in that it involves no question of legislation or the statutes of economics. It involves the merits of the profession, the services we are going to render to the community, to the people of this state. Whatever action you may take upon that report, which you all have in your hands and I hope have at least partially read, I trust will be in furtherance of this splendid program of postgraduate work, which promises so much for us.

I am hoping that, as President, I am going to have the cooperation of every man here, and of the 3,000 more members of the State Society.

I thank you very much. (Applause.)

The Speaker: The address of the President-Elect will be referred to the Committee on Society Business.

The annual report of the Council will be given by the Chairman of the Council, Dr. Burton R. Corbus (Applause.)

Dr. Burton R. Corbus read the report of the Council.

REPORT OF THE COUNCIL

To the House of Delegates:

The Council has frequently and freely imparted its official actions through *THE JOURNAL*. It therefore presents this annual report in summarized form.

FINANCES

Our auditor's report has been published. Our securities are recovering in value. Funds were received from the MacGregor Foundation and the 20th Century Fund for the expenses of the Committee on Economics.

MEMBERSHIP

It is heartening to report 3,207 members in good standing. On September 1 there were 246 delinquent members.

LEGISLATION

Your Council is exceedingly well impressed by the activity and the program as proposed by this year's Legislative Committee. Under its capable, experienced chairman who is giving up much time to the work, the committee is proceeding most efficiently. The program emphasizes the value of and the necessity for personal contacts. We believe the committee's program to be most sound, and we urge that the members of each County Society make a special effort to respond to the requests of this committee. If we are to accomplish anything in a legislative way the committee must have the support and the sustained interest of every member of the profession in the State.

ECONOMICS

It is anticipated that the most important matter of business to come before this House at this session will be the report of the Committee on Economics. This House of Delegates should be, and we know that it is, most appreciative of the splendid work performed by this committee and appreciative too of the many sacrifices and the weary hours given by each committee member throughout this long period of study. You have accepted the valuable factual data gathered together. You have approved the general principles of the plan for Mutual Health Service limited to those in certain economic brackets.

You have instructed your committee to proceed with the gathering of facts and directed it to formulate a plan or plans based on these facts. You have instructed your committee to contact employers and employees, looking towards the establishment of such a plan. It is now your obligation to make the final decision. It will be a difficult matter to decide. You will, of course, consider carefully the plan or plans which will be presented to you. We beg of you that you address yourself to it most earnestly. Your Council has no recommendations to make, nor would it be becoming for it to do so. This committee is definitely a House of Delegates Committee. Your Council has furthered the activity of this committee in every way, but it has been extremely careful and particular not to alter in the slightest any of the instructions given to the Committee by the House of Delegates. It has insisted that in the acceptance of funds from outside sources both the spirit and letter of the House of Delegates instructions be observed. It has carefully refrained from any action which might be considered as creating policies or in any way influencing the work of this committee. Were your Council called upon to make a recommendation it would be much embarrassed. We are a cross section of the profession and though probably more familiar with the study than most of you, we yet find that closer study makes the problem no less difficult. Changing times make for changing minds and your decision of this week cannot and must not be irrevocable.

The Council urges that you be guided by the policies approved by the American Medical Association.

POSTGRADUATE WORK

The Council has coöperated fully with the Department of Graduate Medicine of the University and the Medical Department of Wayne University in providing postgraduate opportunities for our members in Michigan.

The Council is quite proud of the expansion of this program. Greater expansion is contemplated and announcement of opening new graduate centers in Flint, Kalamazoo, Battle Creek and Grand Rapids is about to be made. Michigan leads in making available exceptional opportunities for graduate work. The Council urges that every member avail himself of these opportunities.

FERA PROBLEMS

When the Emergency Relief regulations were promulgated your Council immediately sought and secured conferences with the State Commission. These conferences in regard to medical regulations and fees found the Council's Committee hampered by the ill-advised action on the part of one or two County units that had entered into agreements with County Commissions. Eventually an agreement was made but it would have been more satisfactory had we not had to contend with these County precedents.

Your Council requests that in all these and other matters local action be held in abeyance until a state policy, satisfactory to the profession, has been determined. Independent local action may militate against the profession's best interests.

Your Council is now active in a movement and is joining with other states and the American Medical Association to secure the appointment of national, state and local medical directors. We feel that the appointment of these medical directors and placing on them the responsibility of directing medical relief will eliminate many present unsatisfactory conditions.

ANNUAL MEETING

By reason of its experiences in supervising the arrangements necessary for an annual session and

because the selection of certain places entails expenses far in excess of what is warranted, your Council requests that the determination of the place for holding our annual meetings be vested in the Council.

Your Council transmits the following invitations for your 1935 meeting place without recommendation:

Flint
Sault Ste. Marie
Mackinac Island

Your Council makes the following observations:

(1) If an outing meeting is deemed desirable, Mackinac Island is more suitable. The program would consist of half day general scientific sessions and the meeting of the House of Delegates. Section meetings, Scientific and Commercial Exhibits would be suspended.

(2) It is questionable if the facilities of Sault Ste. Marie are adequate or can be made so, and we fear a small attendance would result.

THE JOURNAL

The Journal's standard has been maintained. The Council has adopted the policy of prompt presentation of Society action and activities in every issue of THE JOURNAL. Members and County Officers will enhance organizational work if they will read and be guided by these reports. THE JOURNAL is your Officers' and the Council's avenue of official communication to the members.

SECRETARY

The Council has announced the resignation of our Secretary, who has served you for twenty-two years. The Council has appointed an Acting Secretary who will serve until the January meeting of the Council. This action will enable the Council to have the opportunity of carefully reviewing the qualifications of men competent to discharge the duties of this important office.

CONCLUSIONS

Medicine is in a strategic position. Here, by united action and by careful consideration of the problems before us, we shall continue, as we have for 114 years, to work for the best interests of the public and the profession of this commonwealth.

AMENDMENTS TO BY-LAWS

To the House of Delegates:
Gentlemen:

To clarify conflicts and also to provide specific items, the Council recommends to the House of Delegates the following amendments to the By-laws.

AMENDMENT NO. 1

By-Laws—Chapter 1, Sec. 3.

Add the following two new paragraphs to the Section:

"Members who become reinstated by the payment of back dues shall not be entitled to medico-legal protection for any professional services rendered during their period of arrears and for which malpractice claims may arise."

"For the purpose of determining the dues for new members only, the fiscal year of the Society shall be divided into four three-month periods. New members shall pay adjusted annual dues for the unexpired quarterly periods of that year. Such new members shall not be entitled to medico-legal or other membership benefits until their election to membership has been duly reported to the State Secretary and such protection and benefits shall not cover any period prior to their becoming members in good standing."

AMENDMENT NO. 2

By-Laws—Chapter 5

Add the following new Section:

"Section 11. The following County Societies shall constitute the Councilor Districts of the State:

First District—Wayne

Second District—Hillsdale, Ingham, Jackson

Third District—Branch, Calhoun, Eaton, St. Joseph
Fourth District—Allegan - Kalamazoo - Van Buren, Berrien, Cass
Fifth District—Barry, Ionia-Montcalm, Kent, Ottawa
Sixth District—Clinton, Genesee, Shiawassee
Seventh District—Huron, Lapeer, Sanilac, St. Clair
Eighth District—Gratiot-Isabella-Claire, Midland, Saginaw, Tuscola, Gladwin
Ninth District—Grand Traverse-Leelanau, Manistee, Benzie, Wexford (Wexford, Kalkaska, Missaukee and Osceola)
Tenth District—Bay-Arenac-Iosco, O.M.C.O.R.O. (Otsego, Montmorency, Crawford, Oscoda, Roscommon and Ogemaw combined)
Eleventh District—Mason, Mecosta, Muskegon, Oceana, Newaygo, Osceola-Lake
Twelfth District—Delta, Marquette-Alger, Schoolcraft, Luce, Chippewa-Mackinac
Thirteenth District—Alpena-Alcona, Northern Michigan (including Antrim, Charlevoix, Cheboygan, Emmet, Presque Isle)
Fourteenth District—Livingston, Lenawee, Monroe, Washtenaw
Fifteenth District—Macomb, Oakland
Sixteenth District—Wayne
Seventeenth District—Menominee-Dickinson-Iron, Ontonagon-Baraga, Gogebic, Houghton-Keweenaw

RESOLUTION NO. 1

The Council recommends the adoption of the following resolution:

WHEREAS: Article 8, Section 2, of the Constitution provides that no more than four Councilors shall be elected at any annual session, and,

WHEREAS: In creating new Councilor Districts and electing Councilors their terms of office conflict with the Constitution's provisions, therefore

BE IT RESOLVED: That the terms of the present Councilors shall be fixed as follows:

	Term Expires
Carstens	1936
McIntyre	1935
Hafford	1935
Boys	1936
Corbus	1936
Cook	1936
Heavenrich	1937
Powers	1937
MacMullen	1937
Urmston	1937
Treynor	1938
Perry	1938
Van Leuven	1938
Cummings	1934
Baker	1935
Brunk	1935
Manthel	1938

Respectfully submitted,
B. R. CORBUS, *Chairman.*

The Speaker: Thank you, Mr. Chairman. The report of the Chairman of the Council, with the exception of that part referring to changes in the Constitution and By-laws, and changes in the term of years of Councilors, will be referred to the Committee on Council Reports. That part of the Chairman's report with reference to changes in the Constitution and By-laws and term of service of Councilors will be referred to the Committee on Miscellaneous Business. If any members of those committees on the list are not present, their alternates are appointed to take their positions.

Committee reports. A number of these reports have already been printed in THE JOURNAL: The report of the Woman's Auxiliary Committee, Radio Committee, Preventive Medicine, Therapeutics, and Cancer Committee.

If the Chair hears no objection, those reports as printed will be referred directly to the Committee on Reports of Committees. Hearing no objection, those reports are so referred.

Committee on Legislation. Dr. Bradley wishes to make a supplemental report in addition to the one which has been published. In the absence of Dr. Bradley, Dr. Christian will present this report.

Dr. Christian read a supplemental report of the Committee on Legislation.

The Speaker: The supplemental report of the Committee on Legislation, in addition to the printed report, will be referred to the Committee on Committee Reports.

Dr. Christian, I wish you would extend to Dr. Bradley the sympathy of the House and the hope that he will soon be with us.

The next order of business is the report of Delegates to the A. M. A. Dr. J. D. Brook, of Grandville.

Dr. J. D. Brook read the report of the Delegates to the American Medical Association.

REPORT OF DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION
Cleveland Session, June, 1934

To present a verbal picture in abbreviated form of the transactions of the House of Delegates of the American Medical Association, considering the detailed reports of the Board of Trustees, the Secretary, the Judicial Council, the forty-five sets of resolutions presented, and the various committee reports thereon is not an easy task, hence the writer has attempted to present such portions of the proceedings as would appear to be of interest and value to the members of this house of delegates.

The Cleveland meeting will perhaps be recorded as one of the most important concerning action taken in defense of the doctor since the reorganization of the Association more than thirty years ago. This was manifest in the tone of various resolutions presented which mentioned apparent infringements upon the practice of medicine particularly by lay technicians, and again by resolutions which stingingly condemned special medical organizations as issuing pronouncements of policies in the field of medical economics and medical practice which do not represent the views of organized medicine. The following resolutions or synopsis of resolutions and the committee reports thereon we believe are of interest.

The following is from the report of the Reference Committee on Legislation and Public Relations, Dr. Chas. E. Mongan, Massachusetts, Chairman:

"1. Your committee heartily approves of the excellent work done by the Bureau of Legal Medicine and Legislation in the matter of NIRA legislation and urges the Bureau to continue to watch the development of codes likely to affect the practice of medicine, and especially to endeavor to protect the physician engaged in the practice of roentgenology.

"2. Federal Emergency Relief Administration: Your committee commends the interventions of the Bureau in the development of emergency medical relief service and approves of its acts; your committee recommends that the proper agency of the American Medical Association make an early survey of conditions existing at this time with a view to correcting discrepancies in the service and making possible improvements.

"3. Your committee would point to the fact that the freedom of choice of physician has been preserved in this service and that for the first time the fact that only the medical profession may properly evaluate medical service has been recognized.

"4. Federal Civil Works Administration: This report is historical. The only phase of this service of interest now is the delay in adjustment of claims of physicians for services rendered. This delay is due largely to the need of correction of errors in the reports of physicians who rendered the service. The Bureau should continue in touch with the situation and facilitate the proceedings as much as possible.

"12. Resolutions on Discrimination Against Certain Members of the Medical Profession: The matter was fully covered by the resolution adopted by this House in 1933 as follows:

"Resolved, That the American Medical Association in annual session assembled, condemns the persecution of any individual on account of race or religion, by any state or under any flag."

Dr. Geo. E. Follansbee, Chairman of the Judicial Council, presented three amendments to the Principles of Medical Ethics which were adopted on recommendation of the Committee on Amendments to the Constitution and By-Laws: The recommendations are rather lengthy and will be found on page 2118 of the Journal. I quote however two interesting paragraphs:

"Contract practice per se is not unethical. However, certain features or conditions if present make a contract unethical, among which are: 1. When there is solicitation of patients, directly or indirectly. 2. When the compensation is inadequate to assure good medical service. 4. When there is interference with reasonable competition in a community. 5. When free choice of a physician is prevented. 6. When the conditions of employment make it impossible to render adequate service to the patients. 7. When the contract because of any of its provisions or practical results is contrary to sound public policy.

"Each contract should be considered on its own merits

and in the light of surrounding conditions. Judgment should not be obscured by immediate, temporary or local results. The decision as to its ethical or unethical nature must be based on the ultimate effect for good or ill on the people as a whole."

Dr. Burt R. Shurly, delegate from the Section of Laryngology, Otolaryngology and Rhinology presented resolutions in regard to hospital inspection and the committee on Medical Education, to whom the resolutions were referred, recommended that he contact the Council on Medical Education and Hospitals for information for correction of abuses mentioned in his resolutions.

The following is of interest in the report of the Committee on Medical Education. Resolution found on page 2198.

"2. The resolution introduced by Dr. L. J. Hirschman, Michigan, and Dr. D. C. McKenney, Section on Gastro-Enterology and Proctology, on the recognition of specialties for certification by the American Medical Association, was considered by your committee, to the deliberations of which many members of the Council on Medical Education contributed. In view of the fact that the American Medical Association recognized and provided a Section on Gastro-Enterology and Proctology, now in existence for sixteen years, this committee approves of the resolution and recommends that it be referred to the Board of Trustees and Council on Medical Education and Hospitals for determination of the methods of examination and certification in these specialties."

The following additional report by Dr. George E. Follansbee, Chairman of the Judicial Council, is in illustration of my previous statement regarding the issuing of pronouncements of policies in the field of medical economics by groups of specialists:

"Dr. George Edward Follansbee, Chairman, presented the following report:

"A resolution introduced by Dr. Charles J. Whalen, Illinois, calls attention to a recent action by the Medical Service Board of the American College of Surgeons approved by its Board of Regents, advocating and publicizing a procedure for furnishing medical and hospital care for certain classes of the population. No consideration appears to have been given to policies or procedure previously adopted by the American Medical Association, of which the Board of Regents are members. The American Medical Association is the one organization representing the entire body of physicians constituting the medical profession and by virtue of that fact is the only organization qualified to speak for the varying interests and ideas of the profession as a whole.

"Recurring proposals concerning the entire practice of medicine from small sections of the profession without due regard to the policies of the entire profession as represented by the American Medical Association when presented to the public through other channels than the representative body are confusing to the public mind, are harmful to the profession and give aid and assistance to those bodies and individuals attempting to revolutionize medical practice.

"The Judicial Council therefore recommends the adoption of the resolution as follows:

"WHEREAS, The American Medical Association, including 100,000 physicians, is the only democratic body representing the organized profession of this country through delegates regularly elected through county and state medical societies; and

"WHEREAS, Other medical organizations and groups, representing selected groups of specialists, have from time to time issued pronouncements of policies in the field of medical economics and medical practice, which do not represent the views of organized medicine and which purport to guide the medical profession and the public in the administration of medical affairs; and

"WHEREAS, The House of Delegates of the American Medical Association has repeatedly condemned the issuing of such announcements and policies, which seriously embarrass the attempts of this organization to secure adequate care for the health of the American people and to protect the ideals of the medical profession; and

"WHEREAS, The Board of Regents of the American College of Surgeons, assembled in Chicago on Sunday, June 10, promulgated a policy including a prepayment plan for medical care, restricted to so-called 'approved hospitals' to members of the staffs of such hospitals, and to physicians acceptable to such staffs; and

"WHEREAS, This action of the Board of Regents of the American College of Surgeons has been spread to the people of the United States through the public press on the opening day of the annual session of this House of Delegates; therefore, be it

"Resolved, That the House of Delegates of the American Medical Association express its condemnation of such tactics and of this apparent attempt of the Board of Regents of the American College of Surgeons to dominate and control the nature of medical practice; and be it further

"Resolved, That the House of Delegates request the Board of Trustees of the American Medical Association and the Judicial Council to ask the Board of Regents of the American College of Surgeons, who are themselves members of the American Medical Association, to explain the reasons for their action and to justify the attempt by this small group within a specialistic organization to legislate for all the medical profession of this country, truly represented only by the American Medical Association.

"The report of the Judicial Council was adopted on motion

of Dr. C. E. Humiston, Illinois, seconded by Dr. Albert Soiland, Section on Radiology, and carried unanimously."

Resolutions rather lengthy, found on page 2116 of the Journal "Opposing the Administration of Anesthetics by Any One Except a Licensed Physician," was referred to the Reference Committee on Miscellaneous Business which reported through its Chairman, Dr. H. B. Everett, that: "owing to the varying conditions which prevail in urban and rural districts, the matter in question deserves more careful study and survey than this committee can give at this time. We recommend that this resolution be referred to the Council on Medical Education and Hospitals for further study and report at a later time."

Resolution Requesting Appointment of Committee to Contact Leaders of Organized Labor, was presented by Dr. R. L. Sensesich, of Indiana, as follows:

"WHEREAS, The legislative program for consideration of the next congress will no doubt include prospective measures of social insurance, and

"WHEREAS, There are those who strongly favor the including in this program the enactment of legislation creating some form of sickness insurance, and

"WHEREAS, Ill advised legislation would harmfully affect the group of individuals to whom sickness insurance would be offered, as well as the medical profession, who would be required to provide the service, and,

"WHEREAS, A review of the history of the creation of sickness insurance as recently reported by the Bureau of Medical Economics of the American Medical Association indicates that the establishment of sickness insurance in Europe has frequently been actuated by political motives or economic purposes, not giving full consideration of the best interests or wishes of the groups involved, and in no country have the labor unions led a demand for sickness insurance, and,

"WHEREAS, In the present period of readjustment of relationship of employer and employee, under guidance of the state, the demands of those who will speak for the body of millions of organized labor will be an all-important factor in determining the shape any such legislation will take, be it therefore

"RESOLVED, That the Board of Trustees be requested to appoint a committee whose duty it shall be, at the proper time, to contact the leaders of organized labor, to learn the attitude of the group they represent, and in conference with them to present the medical factors involved."

The Committee on Economics to whom this resolution was referred reported that:

"Your committee realizes the importance of this resolution and would recommend that the Trustees be requested to contact at such time and in such manner as they deem proper with the leaders of those groups or bodies interested, to bring about a mutual understanding of their aims and desires not only from the point of view of the medical profession but also for the best interests of the patient with due regard to the basic beliefs and principles of medicine. It would likewise be well if the suitable committees of state societies would do the same."

Resolutions on Exploitation of Roentgenologists in Hospitals and on Barring from the Practice of Radiology All Persons Not Licensed to Practice Medicine and many others on interesting subjects which reflect the trend of thought by our brethren from various parts of the country we commend to you for your perusal as well as the addresses of the President, President-Elect, Speaker, Report of the Secretary and Board of Trustees and the Committee comments thereon, as found in the June 23 and June 30 editions of the Journal.

Unquestionably the outstanding feature and topic of discussion was the presentation of resolutions on Mutual Health Service by the Michigan Delegation, as instructed by this House of Delegates on April 12, last.

The resolutions were presented by Dr. Carl F. Moll, following which Dr. J. H. J. Upham, Ohio, Chairman of the Board of Trustees, recommended that the resolutions be considered in executive session Monday afternoon. Motion to that effect was made by Dr. Moll and the session was called for 2 o'clock. At this session following a statement by Dr. Upham the subject was referred to a special committee for report at an executive session called for Tuesday afternoon June 12. The Monday afternoon meeting adjourned at 2:40 p. m., following which your delegates met with the special committee which continued in session until after 6 o'clock, discussing the problem. The committee met again at noon on Tuesday, at which time suggestions made by your delegates were incorporated in the report. The special committee presented its report at the second executive session Tuesday afternoon. It is impractical to present in this, your delegates' report, the special committee report in its entirety, first, because of its length, and, secondly, because it has been printed and may be found on page 2199 of the *Journal of the A. M. A.* We feel, however, that certain salient features of the report are worthy of repetition at this time.

The following portions from the special committee's report, Dr. Nathan B. Van Etten, New York, Chairman, are therefore emphasized by your delegates:

"Your reference committee has reviewed with painstaking interest the report of the procedures of the commission of the Michigan State Medical Society, commends the efforts of the commission to study and digest an important social operation concerned with medical service in England, applauds the sanity of its conclusion and its recorded opposition to the introduction into the United States of any system

of health insurance now existing in any country in Europe, because no system conforms at present with all of the policies adopted by the Michigan House of Delegates in July, 1933, namely:

1. Free choice of physician by the insured.
2. Limitation of benefits to those of medical service.
3. The control of medical service benefits by the profession.
4. The exclusion of individuals or organizations that might engage in health insurance for profit.

"Your committee believes that their principles are basically sound and that they should be included within any further study of medical service to be adopted as the policy of organized medicine.

"Your committee regrets the criticisms of policy and sincerity of officials of the American Medical Association and the publicity given to them and finds that it was due to a misunderstanding regarding information which failed to reach the delegates from Michigan. This relates to the efforts of the Board of Trustees, the Bureau of Medical Economics, the Secretary and the Editor, to study continuously all forms of social experiment affecting the practice of medicine.

"Your committee believes in the sincerity of the officials of the American Medical Association in promoting free access of any member of the Association to all of the files and completed records in which he may be interested."

"The delegates have in their hands a pamphlet entitled 'Sickness Insurance Problems in the United States' as presented by the Board of Trustees.

"Your committee does not recommend any plan but has abstracted from the pamphlet the following principles and suggests that they be followed by all constituent bodies of the American Medical Association as bases for the conduct of any social experiments that may be contemplated by them:

(The writer of this report has taken it upon himself to christen these principles by naming them "The American Medical Association Ten Commandments on Health Insurance of 1934.")

"First: All features of medical service in any method of medical practice should be under the control of the medical profession. No other body or individual is legally or educationally equipped to exercise such control.

"Second: No third party must be permitted to come between the patient and his physician in any medical relation. All responsibility for the character of medical service must be borne by the profession.

"Third: Patients must have absolute freedom to choose a duly qualified doctor of medicine who will serve them from among all those qualified to practice and who are willing to give service.

"Fourth: The method of giving the service must retain a permanent, confidential relation between the patient and a 'family physician.' This relation must be the fundamental and dominating feature of any system.

"Fifth: All medical phases of all institutions involved in the medical service should be under professional control, it being understood that hospital service and medical service should be considered separately. These institutions are but expansions of the equipment of the physician. He is the only one whom the laws of all nations recognize as competent to use them in the delivery of service. The medical profession alone can determine the adequacy and character of such institutions. Their value depends on their operation according to medical standards.

"Sixth: However the cost of medical service may be distributed, the immediate cost should be borne by the patient if able to pay at the time the service is rendered.

"Seventh: Medical service must have no connection with any cash benefits.

"Eighth: Any form of medical service should include within its scope all qualified physicians of the locality covered by its operation who wish to give service under the conditions established.

"Ninth: Systems for the relief of low income classes should be limited strictly to those below the 'comfort level' standard of incomes.

"Tenth: There should be no restrictions on treatment or prescribing not formulated and enforced by the organized medical profession.

"If it is determined in a community that some experiment to change or improve the method of administering medical service is desirable, observance of these principles will remove many of the 'disturbing influences' from such an experiment. In all such experiments, attention must be sharply focused on the quality of medical service.

"Such restrictions will undoubtedly lower the enthusiasm of many of the present advocates of such schemes. They remove the interest of the politician, the commercial promoter and all those who consciously or unconsciously are seeking to achieve other objectives than better medical care for those unable to provide such care for themselves under present conditions. All these principles are directed toward protecting the character of service to be given and all are directly designed to guard against abuses which experience shows are bound to arise when these principles are neglected. In most communities it will be found that comparatively few changes in the methods of administering medical care will be necessary. That type of medical practice which preserves the personal relationships between physician and patient, that maintains the practice of medicine as a profession, and that has withstood the test of centuries must be preserved for the best interests of both the public and the medical profession."

An attempt to incorporate into the report that a standing committee of seven from the A. M. A. house of delegates composed of men in the active practice of medicine be appointed to further study the subject was defeated following the recommendation of the Committee on Economics, to whom it was referred, which stated that it was apparent that the Bureau of Medical Economics has every facility for further study.

Unfortunately the Michigan resolutions not having been accompanied by all the necessary information incident to their proper defense, your delegates were somewhat handicapped in debate. This situation had undoubtedly been brought about through misunderstandings between some of the members of our Society, your delegates, and the officers of the A. M. A. We harbor no ill will and we criticize no one, realizing fully that speed and action were necessary and that perhaps it was taken for granted that we were well informed. We all make mistakes which in retrospect would not have occurred and in that spirit we accepted the situation. Your delegates were very cordially received and very fairly treated by an unbiased committee well selected by the speaker, except that Dr. Sinai was not called before the committee in the face of the fact that your delegates had requested that he be allowed to appear.

Your delegates were extremely diligent and made a sincere effort to carry out the instructions of this house and although we were not successful in obtaining the appointment of a special committee for further study of the subject, the Michigan resolutions did bring forth from the American Medical Association its position on Health Insurance as promulgated in the ten points heretofore mentioned, based practically on Michigan's four points. We believe this to be an outstanding achievement to the everlasting credit of the Michigan State Medical Society.

Regardless of the conditions which prompted the controversy between our Society and the A. M. A., we believe that sincere attempts should be made to avoid them in the future to the end that the various units of organized medicine may be united to meet the common foe.

The Cleveland meeting adjourned following the election of James S. McLester of Birmingham, Alabama, as President-elect, Dr. Olin West as Secretary and Dr. F. D. Warnshuis, as Speaker, and selected Atlantic City as the 1935 place of meeting.

All of which is respectfully submitted and signed by your Delegates.

The Speaker: This report will be referred to the Committee on Society Business.

Those are all of the special committee reports. The next order of business is the report of the Committee on Economics, Dr. W. H. Marshall of Genesee, Chairman.

Dr. L. J. Hirschman (Wayne): I move that we recess for five minutes before this report is read.

The motion was regularly supported and carried and the House recessed for five minutes.

Dr. L. J. Hirschman (Wayne): I move that this House of Delegates go into executive session to receive the report of the Committee on Economics.

Dr. Karl Brucker (Ingham): I support the motion.

The Speaker: Moved by Dr. Hirschman of Wayne, and supported by Dr. Brucker of Ingham, that the House of Delegates go into executive session to receive the report of the Committee on Economics.

All those in favor say "aye"; those opposed, "no." It is carried.

I will appoint as Sergeants-at-Arms Dr. Ellet of Berrien and Dr. Andrews of Kalamazoo. Only delegates, officers of the Society, or members of the Society may remain while the House is in executive session.

Upon vote of the House, Dr. Sinai and Dr. Henry Vaughan were invited into the executive session.

We will now listen to the report of the Chairman of the Committee on Economics, Dr. Marshall.

Dr. W. H. Marshall read the first three pages of the report of the Committee on Economics.

REPORT OF COMMITTEE ON MEDICAL ECONOMICS

Three years have elapsed since the House of Delegates appointed a special Committee to survey the medical services and health agencies in Michigan. It is appropriate at this time the special committee which, since last year, has been designated as your Committee on Medical Economics, review, briefly, its activities to date.

It is to the everlasting credit and a tribute to the vision of the State Society that it has been working for three years upon problems that only recently have engaged the attention of practically all other state societies. For evidence of this, one but needs to examine the current literature. Thus, Michigan, through its collection of factual information, is in a strong position to present the case and cause of the profession to government officials, the public and to other medical organizations. Your committee regards this as one of the most important results of the society's activities, a result to which later reference will be made.

In July, 1933, your committee presented a large body of facts, with recommendations, to a specially convened House of Delegates. It is significant that those facts, though they have been subjected to minute and, at times, hypercritical analysis, have not been controverted. The purpose in presenting the detailed factual evidence was to secure some agreement among the members of the profession concerning the nature of medical economic problems. Without this agreement, your committee felt that Michigan would engage in the hopeless controversy that characterizes so much of the present-day discussion in the United States.

Briefly, the facts adduced were:

1. Michigan has a large body of people whose annual incomes are insufficient to provide the necessities of life. During periods of economic stress, this group increases to an extent that is difficult to calculate.

2. Michigan has a large body of people whose annual incomes are sufficient to provide the ordinary necessities of life. Normally, this group contains the largest number of people.

3. Michigan has a comparatively small body of people whose incomes are sufficient to provide both the ordinary and extraordinary necessities of life.

4. Because of its nature, medicine is in an anomalous position as a necessity. It is the only accepted necessity that is unpredictable and therefore unbudgetable. Herein lie the differences between medical care and such items as food, shelter, fuel and clothing.

5. The American people purchase what they are taught to purchase; hence, when the need for medical care arises, it is too often found that the family surplus has been expended and mortgaged for the purchase of items of secondary importance. In this aspect of American life, the profession faces a fact which no amount of criticism alone will solve. If the consumption of patent medicines has increased so tremendously in spite of the direct and concerted attack of the profession, how much less could be expected from any attack on the purchase of movies, radios, fur coats and automobiles in lieu of medical service. There is little doubt that even among the higher income groups, the medical profession included, it would be found that many luxury items are purchased before all provisions are made for the insecurities of long illness, death or other catastrophes.

6. As a result of the foregoing factors that adversely affect the distribution of medical services, there is a tendency on the part of the public to

- a. Postpone medical care until emergency care becomes necessary.

- b. Place upon the medical profession an excessive burden of free or only partially compensated service.

7. The net result of this is seen in the following situations:

- a. Those of the population who have lived provident lives may suffer a loss of all or a large portion of their savings through the emergencies of sickness.

- b. Those who have been improvident may receive services of a comparable nature at an exceedingly low cost.

8. All this adversely affects the lives and the incomes of physicians as shown by the fact that in 1929 one-third of all those practicing in the United States, and in 1931 one-half of those in Michigan, received incomes below \$2,500. Until the last five years this low-income group of physicians, having no knowledge of the number included in its ranks, has been relatively inarticulate. It is now becoming less so and the utterances of medical leaders with high incomes that free service and partially compensated service are the divine rights of the physicians are falling upon less receptive ears.

9. Finally, the probable effect of the low incomes of so many physicians upon the quality of medical service has been given too little thought throughout the country. More will be said later concerning this factor.

These are a few of the salient facts that flowed from the study of Michigan's medical problems. They appeared to show clearly the nature of the major problems and to justify the conclusions reached by your committee. Their acceptance by the House of Delegates cleared the way for a consideration of any solutions that might be offered.

At the annual meeting in September, 1933, your committee presented a "continuation program" for the approval of the Delegates. In spite of the great number of problems in the state, your committee suggested that it devote its efforts during the year to three aspects of medical service, as follows:

1. A study of postgraduate medical needs and the presentation of a plan or plans to meet professional and public requirements.
2. A study of the care of indigents, and the presentation of a plan or plans applicable to local areas in the State.
3. A study of health insurance and the presentation of a plan or plans in accordance with the policies adopted by the House of Delegates.

The House of Delegates approved this program and therefore your committee's report will now deal with each of the above items.

POSTGRADUATE EDUCATION

In its first series of studies, your committee gathered certain data concerning the physician's postgraduate activities. The evidence was very disturbing, but because of its inconclusive nature no conclusions were drawn and a further study was undertaken. The results of this study have been received by each Delegate. Your committee regards it as the most comprehensive study of this aspect of medicine that has ever been made. Its content is a most emphatic command that the profession undertake immediate steps to improve the quality of medical care. To say that the United States provides the highest quality of medical service obtainable in the world is only to beg the point. The efforts of the medical profession will not be done until it may be said that the United States has the highest quality of service that science permits. If this objective is to be attained it will require the combined efforts of the educational institutions and the profession.

At this time I shall call upon the Chairman of the Subcommittee on Postgraduate Education to present his report and recommendations: Dr. C. G. Jennings.

Dr. Jennings being absent, Dr. Marshall continued.

HEALTH INSURANCE

In April, 1934, at a special meeting in Flint, the House of Delegates approved the general principles of an experiment in health insurance titled "Mutual Health Service." Emphasis was placed upon the experimental nature of the program and your committee was directed to prepare the final details of a plan for the consideration of the Delegates. Unforeseen circumstances prevented the completion of the program. Because of financial obstacles it was necessary to postpone work on the details until July 1. It will be recognized that, in view of the size of the task, two months were insufficient to produce a carefully considered program.

Because of the situation in health insurance in the United States, your committee withheld final action on its report and recommendations until last night. The wisdom of this course is proved by the developments that have taken place during the past three weeks.

Since July 1, and under the leadership of the medical profession, other professional groups in Michigan have been studying and formulating programs in connection with "Mutual Health Service." To date, committees have been appointed by the dentists, hospital administrators and nurses. The chairmanships of these committees are held by Dr. M. Webster Prince, Dr. Stewart Hamilton, and Miss Grace Ross, respectively.

An indication of the size of the task necessary to formulate final details may be seen in the work of the dental committee. The most important question to be answered is "What are the dental needs of the population, according to different age groups?" Data on this question are almost entirely lacking. The Dental Committee has received the results of 4,000 oral examinations recently made by the Chicago Dental Society. The Chicago group contributed the examinations and the Michigan committee is proceeding with the analysis of the results. In addition, the Michigan dental committee is planning further examinations to serve as controls upon the Illinois results. Only in this manner will it be possible to determine the services and costs for the minimum of adequate dental care.

In anticipation of the development of the final detailed plan, your committee's discussions with industry and labor have been, thus far, of a general nature. While both of these groups have shown interest—in certain instances, keen interest—your committee has not pushed this aspect of its activities. It is felt that progress in this direction must await the time when the details of the plan are more nearly completed. Only then can the discussions with industry and labor become specific. As it is, the discussions must be limited to general principles.

Your committee is attempting to follow rigidly the course outlined by the House of Delegates in April. A tentative legal opinion concerning "Mutual Health Service" has been secured. It is to the effect that "the plan as proposed is lawful and valid and may properly be carried into effect by the organization of a non-profit corporation under Michigan laws" and, further, "that the plan proposed does not involve the writing of insurance and is, therefore, entirely consistent with the Michigan laws."

At this time it is appropriate to point out certain of the effects of the actions of the House of Delegates in Michigan. The action relative to Mutual Health Service in all probability may serve to prevent a recurrence in the United States of the deplorable situation that prevailed in England in 1912. The statement of Dr. Alfred Cox, Secretary-emeritus of the British Medical Association, is peculiarly significant in the light of occurrences in the United States in 1934:

"With reference to the policy of the medical profession towards health insurance, it was emphasized that the profession should be first in the field with plans and program. It was further emphasized that there is grave danger in waiting for action to be taken by the public or the politicians. 'If the doctors don't know what is necessary in medical care, who does?'"

"If the profession had been first in the field with a plan, there would have been saved much bitter feeling within the profession as well as loss of public prestige."

"The struggle that took place before the Bill was adopted almost split the British Medical Association."

It was the action taken by Michigan in April that brought the matter specifically before the delegates at Cleveland. Therefore, it was through Michigan's leadership that the delegates of the American Medical Association adopted the ten principles for the guidance of the profession in the United States. Though certain of the principles may lend themselves to various interpretations, they should serve to consolidate the profession in the interests of constructive action.

Commenting upon this action, an editorial in the *British Medical Journal*, of August 4, 1934, states:

"Remembering the events of 1911-12 in Britain we can well understand the alarm felt lest the medical profession of the United States should come to grief through divided councils."

The public response to the action taken in Michigan is shown in the following excerpt from an article in the *New York Times* of June 15:

"Michigan expects to experiment cautiously in three counties possibly, carefully studied and controlled.*** This may mean, if it is any indication of a trend, that American physicians may take the planning, inauguration and control of some new system into their own hands."

The task of your committee has not been made easier by reason of certain mental hazards. It is not immune to whispered criticism of its motives nor is it equipped with an impenetrable armor against the misinterpretations of the actions of the House of Delegates. These could not help but slow down and add immeasurably to the difficulties both of research and planning.

However, your committee wishes to report two major events that have occurred within the past three weeks. These completely justify the Society's expenditure of money, time and thought upon medical economic problems.

The first is concerned with the national trend toward health insurance. President Roosevelt has appointed a special committee on Economic Security to consider social insurance. The committee includes Secretary Perkins as Chairman, Secretary Morgenthau, Secretary Wallace, Attorney General Cummings and Federal Relief Administrator Hopkins. The committee has appointed certain members of a technical board under the directorship of Edwin E. Witte. The staff of this board includes, among others, Edgar Sydenstricker of the Milbank Foundation.

Your committee recommends a careful reading of the editorial appearing in the *Journal of the American Medical Association* of August 25. The following excerpts from this editorial are highly significant:

"The appointment by the President of the Committee on Economic Security, is assurance that the President intends to go ahead with his program, and the committee interprets the executive order that created it as a mandate to survey the entire field and outline a complete program for economic security.*** At the annual session of the American Medical Association in Cleveland, ten principles for the guidance of the medical profession in setting up any plan were unanimously adopted. The medical profession, in setting forth these principles, aims to protect the quality of medical service rendered to the people and to safeguard the relationship between patient and physician which is fundamental to the best type of medical practice.*** It is to be hoped that the American medical profession merits enough recognition from our government to cause that government to seek its advice and its assistance in the development of those plans from the very first step in the consideration."

Concerning the last quotation, your committee feels that Michigan now occupies an enviable position among medical organizations in the United States. While other organizations have shown a tendency to expend their energies on controversies and philosophic digressions, Michigan has directed itself toward scientific research. Its three year record of careful, constructive effort and action entitles it to a sympathetic hearing in which its opinions will carry weight.

One of the most disturbing aspects of this national development is a matter which should give pause to the whole profession in the United States. The action in Washington raises the question: Why, or by what chain of events, has the profession been placed in a secondary position as advisor in medical economics? No angry retort to this question will serve any good purpose. The diagnosis of a pathological condition is not aided either by the refusal to recognize a symptom or by anger at its manifestation.

The second of the two major events was the publication of the Report of the Committee on Economics of the Canadian Medical Association. This report titled "A Plan for Health Insurance" is now under consideration by the Provincial Medical Societies. The committee of twenty-seven members responsible for the plan makes these statements:

"In this as in other matters, it is the body which has prepared a concrete proposal which may expect this proposal, with modifications, to be accepted and to provide the basic plan for the final scheme. The original basic plan is always difficult to change, hence its vital importance. For this reason alone, the medical profession of Canada should be prepared with such a plan, if they desire to direct the development of health insurance along the lines which to the members appear to be best. This is not a selfish motive, because what is best for the medical profession must be best for the public. Passive opposition gets nowhere.***

"The organized medical profession should accept their ob-

vious responsibility to give leadership in the professional aspects of medical services. The organized medical profession has the right to expect that they will be consulted by any government considering health insurance or other similar legislation affecting the provision of medical care. That the medical profession should be consulted is in the public interest because the public and the medical profession are mutually and equally interested in securing and maintaining a high standard of medical service. It is the public who would suffer from any lowering in the standards of medical care."

Certain of the seventeen principles adopted by the Canadian Committee are of interest to this House of Delegates for two reasons: first, conditions in Canada do not differ greatly from those in the United States; and, secondly, because of the studies and actions of the profession in Michigan. The principles are as follows:

1. "That the professional side of health insurance medical service be the responsibility of the organized medical profession through the appointment, by the medical societies, of a Central Medical Services Committee and Local Medical Services Committees to consider and advise on all questions affecting the administration of the medical benefit.

2. "That medical care for indigents be provided under the Plan, the State to pay the premiums of the indigent, who then receive medical care under exactly the same conditions as the insured person.

3. "That the Plan be compulsory for persons, with dependents, having an income of less than \$2,500 per annum; and for persons, without dependents, having an income of \$1,200 and less per annum.

4. "That the dependents of insured persons be eligible for the medical benefit.

5. "That there be offered, on a voluntary basis, to those with incomes above the health insurance level, Hospital Care Insurance, and that this be administered as part of the State Health Insurance Plan.

6. "That the only benefit under the plan be the medical benefit.

7. "That the medical benefit be organized as follows:

(a) Every qualified licensed practitioner to be eligible to practice under the Plan;

(b) The insured person to have freedom of choice of general practitioner;

(c) The medical service to be based upon making available to all a general practitioner service for health supervision and the treatment of disease;

(d) Additional services to be secured normally through the general practitioner:

(1) Specialist and consultant medical service (only those so designated to be eligible to practise as specialist and consultant);

(2) Visiting-nurse service in the home;

(3) Hospital care;

(4) Auxiliary services—usually in hospital;

(5) Pharmaceutical service.

(e) Dental service arranged direct with dentist or upon reference.

8. "That the Insurance Fund should receive contributions from the insured, the employers of the insured, and the State.

9. "That the medical practitioners of each local area be remunerated according to the method of payment which they select.

10. "That the Central Medical Services Committee decide the relationship between specialist and general practitioner fees, and between medical and surgical fees.

11. "That contract-salary service be limited to areas with population insufficient to maintain a general practitioner in the area without additional support from the Insurance Fund.

12. "That no economic barrier be imposed between doctor and patient, but that the insured be required to pay a part of the cost of medicines."

It will be noted that there is a rather remarkable agreement between the majority of these principles and those adopted in Michigan last April.

In the light of these and other developments in health insurance, your committee sees three courses that may be followed by the profession. Your committee believes that the selection of any of the courses is a burden which should be borne by the House of Delegates. It, therefore, presents the courses without any specific recommendations:

First: The House of Delegates may reverse its position of last April, discharge the Committee on Medical Economics, discard its principles of health insurance and oppose any national, state or local programs or experiments in that direction.

Second: The House of Delegates may postpone action on health insurance continue the Committee on Medical Economics, and hold itself ready for a special call if and when national or state programs of health insurance appear imminent to this House of Delegates.

Third: If there is sufficient evidence that the probable development of health insurance is no longer debatable and that the method of its development is the subject of major importance, the House of Delegates may reaffirm, with such changes as it deems necessary, the principles already adopted, re-direct the Committee on Medical Economics in the continuation of its work, and request a voice in any national or state consideration of health insurance.

As already stated, these three courses are presented without any recommendation for a choice. The Delegates may see other courses that are outside the vision of the Committee.

MISCELLANEOUS

Because of the rapidly changing aspects of the medical care of indigents due to the program of federal relief, your committee postponed any specific study of this problem. The Chairman attended a number of conferences with the State Relief Commission. The results of these conferences have been reported. As is already known, your committee gave some attention to the care of the indigents in the program of health insurance.

The only important change in the program was the addition of the study of the Detroit Plan of Medical Participation. The data collected were reviewed by a special subcommittee that submitted the following report:

The Subcommittee of the Committee on Medical Economics herewith renders its report on its study of the Detroit Medical Participation Plan. The Plan has been reviewed and data collected are submitted herewith together with a statement by Doctor H. F. Vaughan. The Committee makes the recommendation that this study be continued in view of its inability to prove or disprove its value. It further recommends that further study be on future operations of the plan or a planned schedule for statistical research. The Committee wishes to go on record as believing that the future operation of the Detroit Plan will be materially benefited by the present study.

Also, that Doctor Sinai and his assistants on the research committee be thanked and congratulated on the thoroughness of their work and the time they put on it, and that Doctor Vaughan's spirit of cooperation be appreciated.

In order to prevent the overlapping of activities by state or local committees, and because medical participation is of primary importance to the State Committee on Preventive Medicine and the Committee on Public Health of the Wayne County Medical Society, your committee recommends that any further study of medical participation and the data collected thus far be placed in the hands of the above committees.

As recommended by the House of Delegates, your committee has requested the President of the University of Michigan to appoint a special committee on University Hospital policies. This committee is to meet with a committee from the State Medical Society to consider the role of the University Hospital in the provision of medical care. The membership of the two committees is as follows:

University Committee: Dr. F. A. Collier, Dr. A. C. Furstenberg and Dr. U. J. Wile.

State Medical Society Committee: Dr. H. A. Plaggemeyer, Dr. J. B. Jackson and Dr. H. B. Randall.

Your committee wishes to pay tribute to the work of the sub-committees. But for the assistance given by the members of these committees it would have been impossible to work in any effective manner. With their aid it has been possible for the Michigan State Medical Society to conduct its studies in a logical sequence and to view the results dispassionately.

It is the element of social responsibility that distinguishes the profession from a business or trade. In our social and economic structure the profession stands out like a vein of gold running through quartz. Surrounded by the theories and practices of business, the wonder is not that the profession has been affected here and there by these influences. The wonder is that we may still point to and take pride in our acceptance of the responsibility which places the "good of society" in the forefront.

The garment of leadership is not an easy one to wear. Its size is large, and when it falls upon narrow shoulders its folds tend to hamper and suffocate the wearer. Your committee believes that when the history of medical economics is written, Michigan will be shown to have justified her traditions.

Respectfully submitted,
F. A. BAKER, M.D.
L. G. CHRISTIAN, M.D.
B. U. ESTABROOK, M.D.
I. W. GREENE, M.D.
STUART PRITCHARD, M.D.
P. A. RILEY, M.D.
W. H. MARSHALL, M.D., *Chairman*.

Dr. W. H. Marshall read the report of the Subcommittee on Postgraduate Education.*

Dr. Marshall: A copy of this report is now available for each delegate.

The Speaker: At this time, your Speaker would like to again call your attention to the fact that the House of Delegates at a previous meeting decided that any publicity which was given out should come through a committee. At that time, that Publicity Committee was determined as the Chairman of the Committee on Reports of the Council, the Chairman

of the Council or someone whom he should designate, and the Speaker of the House.

At this time, your Speaker would again like to call your attention to that quotation from Woodrow Wilson, where he said: "One cool judgment is worth a thousand hasty councils."

Inasmuch as this report of the Committee on Economics is available, your Speaker would suggest that this whole subject be made a special order of business tomorrow morning, and that from this point on we proceed with the regular order of business.

Dr. L. J. Hirschman (Wayne): In accordance with your suggestion, and concurring heartily in the sanity of it, I move that we now arise from executive session, and make this a special order of business at eight-thirty tomorrow morning.

Dr. Wm. J. Cassidy (Wayne): I support it.

The Speaker: The motion now is that the report of the Committee on Economics be made a special order of business for tomorrow morning at eight-thirty, and from this point on we arise from executive session and proceed with the regular order of business.

Is there any discussion?

Dr. L. J. Hirschman (Wayne): With the consent of my second, may I change the time of the special order of business to 4 p. m. today?

The Speaker: The motion as it now stands is for the special order at 4 p. m. today. Is there any further discussion? If there is no further discussion, those in favor of the motion for a special order of business for the consideration of the report of the Committee on Economics at 4 p. m. this afternoon say "aye"; opposed. Carried.

The House has now arisen from executive session, and we will proceed with the regular order of business, introduction of resolutions.

Dr. W. C. Ellet, of Berrien County, presented a resolution.

RESOLUTION

WHEREAS, The Berrien County Medical Society at its regular monthly meeting on the 30th of August, 1934, after due discussion and deliberation considered that troubled times have settled upon this State of Michigan and the Medical Fraternity, as well as the entire world, and men of thought have set their minds at work to bring about solutions, that we may all live the "abundant life" and;

WHEREAS, many false premises have been assumed by zealous individuals, in their attempt to correct and prevent future ills in the economic order, and although they have promulgated such ideas with undoubted honest convictions, we feel called upon to point out the dangers of such propositions, particularly the major false premise as shown in the Survey Report of the Economic Committee of the Michigan State Medical Society as published in 1933, which is the basis for the planned economy of Mutual Health Service, which plan is being offered as a solution to our troubles, to quote: "Ever since the English Poor Law of 1601, the right to live has been guaranteed in all civilized countries. The right to live implies more than MERE NECESSITIES of life. Adequate medical services must be distributed to the entire population. It would be manifestly unjust to deny any citizen relief from incapacitating illness," and,

WHEREAS, this premise singles out only medical care instead of further stating, adequate food, shelter, clothing, transportation, legal services and so on with the thousand and one things, which we in this day and age accept as the "necessities of life" and further this quotation ignores economic class distinctions, ignores the goodness and always existing charity of medical men, which facts are common knowledge, ignores the biologic laws of existence and survival of the fit, proven scientific facts which revolutionary legislation on the part of man can never change, and

WHEREAS, a plan has been evolved from this false premise, and we as members of the profession of medicine are singled out and asked to risk our individualism, our personal relationships as developed by the individual contract and fee system to adopt a communistic regimentation, masked under the guise of mutual benefit, to stifle individual research and success, to risk the loss of prestige of our noble profession, to lower our profession to the rank of labor wherein the salary is set by the employer, or at least the scale by arbitration, and all this in order that a theoretic plan built up from plans acknowledged inadequate, and in opposition to the rules and plans of the American Medical Association, entirely in conflict with all the age-old ethic

*This report is a 64 page volume entitled "Postgraduate Medical Education and the Needs of the General Practitioner."

of the arts of medicine, which have stood the test of time and proven good during past economic upheavals far more disastrous than the present, and

WHEREAS, no other profession, guild or trade of any other rank has voluntarily offered to make such experiment or sacrifice, and

WHEREAS, various polls of individual members of the Michigan State Medical Society have shown a preponderance of opposition to the tentative plans of Mutual Health Service,

Be it Hereby RESOLVED, That The Berrien County Medical Society go on record, and cause such Record to be presented to the House of Delegates of The Michigan State Medical Society at their 114th Annual Meeting in Battle Creek in September, 1934, in opposition to the indorsement of the principle of Mutual Health Insurance as so endorsed by the House of Delegates at the special meeting held in Flint, and be it also,

RESOLVED, That the Berrien County Medical Society express its opposition to the adoption of any plan for Mutual Health Service, Mutual Health Insurance, panel, or State Medicine, or any plan aside from that being pursued by the Licensed Ethical Medical Profession in this state today, and

Be it further RESOLVED, that the House of Delegates, and the Council of the Michigan State Medical Society, be asked to refrain from any further expenditure of the funds of said Society to further such plans, or to accept funds from any individual, group or foundation to further such plans, unless the time should arrive when other professions, guilds and tradesmen feel it incumbent upon them to offer similar sacrifices in the regimentation of their services, and then the matter may again be brought before the House of Delegates with proof, and if they so wish, for their consideration.

In forwarding these resolutions may the Berrien County Medical Society, as a component body of the State Organization, urge upon each and every member that in these troublous times we exercise patience, and administer to the sick, and care for our own welfare with the honorarium we receive from the ethical practice of our profession, until such time as the ever oscillating pendulum of economic existence shall return to that point when the "mere necessities of life" are again available to the Practitioner of the Medical Arts, as well as to his fellowmen.

(Signed) BERRIEN COUNTY MEDICAL SOCIETY,
DEAN M. RICHMOND, President,
Attested: EDWIN VARY, Secretary.

The Vice Speaker took the chair.

The Vice Speaker: This resolution, I understand, will be referred to this afternoon's executive session. Are there any other resolutions?

Dr. C. S. Gorsline, of Calhoun County, presented a resolution.

RESOLUTION

WHEREAS, In the past the practise of certain branches of medicine has been delegated to non-medical operatives who have taken the place of regular physicians and;

WHEREAS, Such practise has resulted in usurpation of a portion of the field of medical practise and, to that extent, deprived physicians of a portion of their practise and;

WHEREAS, The circumstances as above related have undoubtedly contributed to the seeming excess of medical personnel in this and other states and;

WHEREAS, In most of the instances above referred to, these encroachments have been sponsored by hospital management and other lay bodies, and;

WHEREAS, Such assumption of prerogative has placed such hospitals and other lay bodies in the actual practise of medicine in competition with physicians doing a private practise in the same vicinity, and;

WHEREAS, The practises above noted have become so widespread and pronounced as to be the subject of condemnatory resolutions by the A. M. A. House of Delegates in its last session, and;

WHEREAS, The practise in general is detrimental to public welfare and the medical profession; therefore be it

RESOLVED, That this House of Delegates of the Michigan State Medical Society does hereby record its opposition to any and all procedures whereby lay technicians or other agents of any hospital or other organization are employed to render services that are essentially professional and require the exercise of judgment, which judgment can only be acquired by regular medical training; except as such services are rendered under direct professional direction; and be it further

RESOLVED, That a copy of this resolution be sent to the A. M. A. Council on Medical Education and Hospitals which now has this matter under consideration as a result of resolutions referred to it by the House of Delegates at the Cleveland meeting.

The Vice Speaker: This resolution as presented by Dr. Gorsline will be referred to the Committee on Miscellaneous Business.

Are there any other resolutions?

Dr. C. F. Snapp (Kent): I have been requested by the Public Relations Committee of our local society to present the following resolution.

RESOLUTION

WHEREAS, The present Afflicted Children's Act, Public Acts 1933—No. 248, 12892 Expense of care and treatment; transportation, Section 4 reads:

"No compensation shall be charged or allowed to the admitting physician or any physician, surgeon, or nurse who shall attend or treat any such child at the state university hospital other than the salary or compensation paid to such person by the state university hospital: Provided, however, That reasonable compensation, to be fixed, and audited by the State, and paid through the hospital as hereinafter provided, may be allowed to any physician or surgeon treating any such child at any such hospital other than the State University hospital at Ann Arbor, Michigan: Provided further, That fifty per centum of the cost of transportation of such child to such hospital shall be paid by the county in which such child resides, and it shall be the duty of the county treasurer to pay such transportation expense out of the general fund of the county upon receipt of the proper certificate of approval thereof from the probate court: Provided further, however, That all services of surgeons and physicians requested or rendered other than that furnished by the university hospital shall be paid by the person requesting said service or charged to the county, as shall be determined by the judge of probate."

WHEREAS, The wording of this paragraph provides "That all services of surgeons and physicians requested or rendered other than that furnished by the university hospital shall be paid by the person requesting said service or charged to the county, as shall be determined by the judge of probate," and

WHEREAS, The Judges of Probate of some counties state that there is no provision in the budget of the Board of Supervisors to provide for the payment of medical fees, and

WHEREAS, This is unfair and discriminating because hospital services are paid and the surgeons' and physicians' services are not paid, therefore be it

RESOLVED, That the Michigan State Medical Society protest the unfairness of this law, and

FURTHER, That the House of Delegates go on record as being opposed to the law and voice itself accordingly, and

FURTHER, That the Legislative Committee of the State Medical Society be instructed to call this fact to the attention of Legislators with a view to having an amendment introduced at the coming session of the Legislature, and

FURTHER, That County Medical Societies bring this matter to the attention of the State Representatives and Senators from their districts.

The Vice Speaker: This resolution presented by Dr. Snapp will be referred to the Committee on Committee Reports.

Are there any other resolutions?

Dr. Wm. S. Reveno (Wayne): I have a resolution here that I have been asked to present on behalf on the Wayne County delegation.

RESOLUTION

WHEREAS, It is the feeling among all those engaged in the practice of medicine that the establishment of a system of health insurance will never be successfully accomplished as long as agencies or persons not conforming to the same rules under which physicians are compelled to practice are permitted to ply their activities of manufacturing, selling and advertising of "patent medicines" and health foods, and of practicing cult medicine, and all the rest of the systems which lay claim to a share in medical practice, therefore, be it

RESOLVED, That the House of Delegates of the Michigan State Medical Society oppose the participation by the members of the Michigan State Medical Society in any scheme or plan of health insurance or social medicine, experimental or otherwise, until such a time as all non-medical agencies or persons engaged in some phase of the practice of medicine have been placed under such adequate control by the State or Federal government as to eliminate them as factors of danger to the public health. And be it further

RESOLVED, That every member of the Michigan State Medical Society be requested to sign a pledge which shall embody the above-mentioned principle.

Respectfully submitted,

WILLIAM S. REVENO,
Wayne County.

The Vice Speaker: This resolution will be referred to the Committee on Committee Reports.

Are there any other resolutions?

Dr. J. M. Robb (Wayne): Dr. Knoblock, and Dr. Hughes, the coroners of Wayne, have made a special investigation of the barbituric acid problem which we are having in the city of Detroit, and in

conference with Dr. Luce we thought this was probably a good time for the State Society to take into consideration the possibility of advising the American Medical Association of the fact that this thing should not become a household remedy. Therefore, we are presenting this resolution.

RESOLUTION

WHEREAS, The rapidly accumulating evidence that countless thousands are seeking relief of various symptoms by dangerous self-medication through highly advertised drugs that may be purchased without restriction over the counter;

AND WHEREAS, The medical profession is aware of dangers that accompany use of certain drugs, dangers not only to the physical condition as illustrated by agranulocytic angina, but the mental deterioration and personality changes that accompany the use of the drugs of the barbituric acid group and their combined forms; be it

RESOLVED, That the House of Delegates of the Michigan State Medical Society appoint a committee to co-operate with other agencies towards the enacting of a Michigan law to legally restrict the sale of the drugs of the barbituric acid group and their combined forms, be it further

RESOLVED, That this action be transmitted through our delegates to the American Medical Association House of Delegates in order that similar action be made nationwide.

The Vice Speaker: This resolution as offered by Dr. Robb will be referred to the Committee on Miscellaneous Business.

The Speaker resumed the chair.

Dr. L. T. Henderson (Wayne): I would like to suggest that a committee draft a resolution for our Secretary, Dr. Warnshuis, a suitable recommendation.

The Speaker: Would you suggest that the Chair appoint a committee?

Dr. Henderson: I would.

The motion was regularly supported.

The Speaker: Motion has been made and seconded that the Chair appoint a committee to draft suitable recommendations for Dr. Warnshuis.

Is there any discussion? Those in favor say "aye"; those opposed. Carried.

The Chair will appoint as that committee: Dr. Biddle of Wayne, Dr. Wessinger of Washtenaw, and Dr. Moll of Genesee. That is a resolution that may be presented later in the session.

Is there any new business?

Dr. L. J. Hirschman (Wayne): Mr. Speaker, I would like to present at this time some minor amendments to the By-Laws.

As we know, the arduous duties of the secretaryship of this Society have been so numerous the present incumbent has been forced to go to a warmer and more suitable and salubrious climate to regain his health. So, in the future I want to have the By-Laws amended in such a way that the door will be open for the employment, at some time, of a full-time incumbent of this office.

Therefore, I wish to offer the following amendments. Under Chapter 4, Section 4, Duties of Officers, it now reads as follows: "The Secretary shall be the custodian of all the records of the Society," and so forth. In Line 1 of that Section, following the word "Secretary," I should like to add the words "not necessarily a physician and member of the Michigan State Medical Society." It will then read as follows: "Section 4. The Secretary, not necessarily a physician and member of the Michigan State Medical Society, shall be the custodian of all the records of the Society," and so forth.

Chapter 4, Duties of Officers, Section 4, and Paragraph 4, reads as follows: "He shall act as one of the delegates of the Society to the American Medical Association." I move to amend this Section by striking out that entire sentence. Our present incumbent of the secretaryship has been called upon to act in a most satisfactory and efficient manner year after year in the House of Delegates of the American Medical Association, and has not been

able to act as delegate. Consequently, for years we have had to appoint an alternate to act in his place. That has been done to the satisfaction of the Society, I believe. However, if at some future time a lay secretary were to be employed, he would, of course, be ineligible.

Therefore, I move that Paragraph 4 under Section 4 be stricken out and the duties of the Secretary be renumbered, so that No. 5 shall be No. 4, No. 6 shall be No. 5, and so on down the line.

That will automatically lay over until this afternoon.

The Speaker: Is there any other new business?

The Vice Speaker took the chair.

Dr. Henry A. Luce (Wayne): Under new business I would like to make as a motion, inasmuch as this power is delegated to the House of Delegates of the Michigan State Medical Society, that Dr. F. C. Warnshuis be made a life member of the Michigan State Medical Society. (Applause.)

The motion was supported by several.

The Vice Speaker: You have heard the motion as supported. All those in favor say "aye"; contrary, "no." So carried.

The Speaker resumed the chair.

The Speaker: We will now take up No. 13, unfinished business, amendments to the Constitution.

The Secretary: Mr. Speaker, there were presented at the last session of the House of Delegates certain amendments to the Constitution. These, under the rules, laid over until this session. They have been printed in the minutes of THE JOURNAL and are now before you for your consideration and adoption or action. They are as follows:

"Section 1. This Society shall consist of active members, honorary members, associate members, retired members and members emeriti. Members shall be members of component County Societies who have been certified to the Secretary of this Society and whose local and states dues have been paid."

"Section 6. (New Section) Members Emeritus. Any physician who has been in practice for fifty years, and who has maintained a membership in good standing for twenty-five years, may, upon application and recommendation of his county society, become a member emeritus. A member emeritus shall be relieved from paying state dues. He shall be entitled to all the benefits and privileges of membership."

"Article XIV. House of Delegates. Section 1. The House of Delegates shall be the legislative body of the Society and shall consist of delegates elected by component county societies."

"Section 5. The House of Delegates shall at the regular annual session elect a President-elect, a Speaker and Vice Speaker of the House of Delegates, members of the Council, delegates and alternate delegates to the American Medical Association, and such other officers as may be created by the House of Delegates unless otherwise specified in the Constitution and By-laws."

"Article VII. Meetings. Section 1. The Society shall hold an annual meeting at such time and place and have such duration as the House of Delegates and the Council may determine. This power may be delegated to the Council."

"Any county society desiring the annual meeting shall file an application with the Council sixty days prior to an annual session."

"Section 2. Special meetings of the Society shall be called for a general session on the petition of the Council or by a petition signed by 250 members, or upon a petition of two-thirds of the delegates registered at the previous regular session. The call for regular and special sessions shall be issued by the President and Secretary, complying with these provisions, not later than ten days after receiving the petition, and shall go forth not later than thirty days before the proposed date of holding a regular or special session."

"Section 3. Special meetings of the House of Delegates shall be called by the Speaker on the petition signed by two-thirds of the delegates who served at the last regular session of the House of Delegates."

Mr. Speaker, these amendments were created by the House of Delegates' Committee on Amendments to the Constitution and By-laws, and supplant and clarify present sections for which these are substituted.

They are now before the House for adoption, if the House is so disposed.

Dr. F. T. Andrews (Kalamazoo): I move that the amendments be adopted as read.

Dr. Wm. J. Stapleton, Jr. (Wayne): I second the motion.

The Speaker: Is there any discussion? Those in favor say "aye"; opposed, "no." Carried.

We recess at this point until two-thirty, and that means two-thirty and not two thirty-one.

The meeting recessed at twelve thirty-five p. m.

HOUSE OF DELEGATES

Tuesday Afternoon, September 11, 1934

The recessed meeting reconvened at two-thirty and was called to order by the Speaker.

The following delegates and alternates were present:

Alpena—F. J. O'Donnell.
Barry—M. R. Kinde.
Bay-Arenac-Iosco—L. F. Foster.
Berrien—W. C. Ellet.
Calhoun—C. S. Gorsline, A. T. Hafford.
Cass—W. C. McCutcheon.
Clinton—D. W. Hart.
Genesee—George Curry, Carl Moll.
Grand Traverse-Leelanau—E. F. Sladek.
Gratiot-Isabella-Clare—T. J. Carney.
Huron-Sanilac—David D. McNaughton.
Ingham—L. G. Christian, Karl Brucker.
Kalamazoo-Allegan-Van Buren—F. T. Andrews, C. Ten Houten.
Kent—A. V. Wenger, H. J. Pyle, R. H. Denham, C. F. Snapp.
Lapeer—H. M. Best.
Lenawee—O. Whitney.
Luce—H. E. Perry.
Manistee—A. A. McKay.
Mason—L. W. Switzer.
Monroe—P. D. Amadon.
Oscoda—Montmorency-Crawford-Oscoda-Roscommon-Ogemaw—C. R. Keyport.
Ontonagon—H. B. Hogue.
Ottawa—A. E. Stickley.
Saginaw—G. H. Ferguson, F. J. Cady.
Shiawassee—I. W. Greene.
Wexford—W. J. Smith.
Washtenaw—John Wessinger, Dean Myers.
Wayne—A. W. Blain, R. H. Pino, H. W. Yates, R. M. McKean, L. J. Hirschman, J. L. Chester, L. J. Garipey, A. P. Biddle, S. W. Insley, L. O. Geib, E. D. Spalding, L. T. Henderson, C. K. Hasley, Wm. J. Stapleton, Jr., Wm. S. Reveno, Roger V. Walker, H. W. Pierce.

The Speaker: The House will please come to order.

Dr. Henderson, have you a report?

Dr. L. T. Henderson (Wayne): Mr. Speaker, we have at the afternoon session seventy-two qualified delegates.

Dr. C. S. Gorsline (Calhoun): I move that the report of the Credentials Committee be made the roll call for the second session.

Dr. John Wessinger (Washtenaw): I support the motion.

The Speaker: You have heard the motion and the second. All those in favor say "aye"; those opposed, "no." It is carried.

The first order of business is the reports of reference committees. Committee on Council Reports, of which *Dr. Karl Brucker* is Chairman. Are you ready with the report of your committee?

Dr. Karl Brucker (Ingham): Mr. Speaker, the committee on the annual report of the Council met this noon and carefully considered the Council report. I wish to say that we feel like complimenting the Council upon making practically a fool-proof and non-controversial report. We tried very hard to find some things to get mad about, but either there wasn't anything to get mad about or the Council was too clever.

The membership, of course, and the finances of the Society are in much better shape than they were a year ago.

The attitude of the Council in leaving the question of medical economics to the House of Delegates, which is the legislative body of the Society, we certainly approve.

The committee approves very highly of the section in the report on legislation, complimenting the Legislative Committee on the immense amount of work which they have already done.

Of course, the postgraduate work which the Council has been doing considerable work upon meets with the committee's heartfelt approval, and also their attitude toward the FERA problem.

I think one of the main things in this report that requires a change of any kind is the picking of the annual meeting. The Council has recommended that the determination of the place for holding the annual meeting be vested in the Council for different reasons: because they are perfectly familiar with all the problems of expense involved and things of that sort, and are better able to investigate the ability of certain places to entertain a convention than this House of Delegates as a whole. So the recommendation of the Council that the determination of the place of the annual meeting be placed in the hands of the Council meets with the approval of the committee.

That is about all. There are some other things that require no decision at all, and that is our report. I move the adoption of this report.

Dr. J. L. Chester (Wayne): I support it.

The Speaker: The adoption of this carries with it the recommendations of the committee. Those in favor say "aye"; opposed, "no." Carried.

Has the Committee on Council Reports any further report?

Dr. Karl Brucker (Ingham): No further report.

The Speaker: The Committee on Society Business, *Dr. George Curry*.

Dr. George Curry (Genesee): Mr. Speaker and Members of the House of Delegates: Your Committee on Society Affairs met this noon at the hotel.

While the committee is able to read between the lines, we feel unable to read between the pages because one or more pages we think were accidentally omitted from this report. But we have no hesitancy in going on record as accepting the report in its entirety and complimenting the delegates to the A. M. A. for what is evidently a very complete report of the proceedings of the national organization at the Cleveland session.

I move the adoption of this portion of the report.

Dr. John Wessinger (Washtenaw): I support it.

The Speaker: Those in favor say "aye"; opposed say "no." It is carried.

Dr. George Curry (Genesee): The contents of the address of our President, *Dr. Le Fevre*, to the House of Delegates are hereby accepted and heartily endorsed by this committee.

I move the adoption of this portion of the report.

Dr. F. T. Andrews (Kalamazoo): I support the motion.

The Speaker: Is there any discussion? Those in favor say "aye"; those opposed say "no." It is carried.

Dr. Curry: We agree with what the late President Woodrow Wilson said January 29, 1916, as enunciated by the Speaker of the House: "One cool judgment is worth a thousand hasty councils." In addition, we endorse the contents of his address to the House of Delegates, even including what *William Jennings Bryan* might have well said, "You shall not crucify the practice of medicine on the cross of socialism. You shall not press down on the brow of *Æsculapius* a crown of regimentation thorns."

I move the adoption of this portion of the report.

Dr. James O'Meara (Jackson): I support the motion.

The Vice Speaker took the chair.

The Vice Speaker: You have heard the motion as seconded. All those in favor say "aye"; contrary, "no." So carried.

Dr. George Curry (Genesee): I move the adoption of the report as a whole.

Dr. Carl Moll (Genesee): I second the motion. The Speaker resumed the chair.

The Speaker: Is there any discussion? Those in favor say "aye"; opposed, "no." It is carried.

Committee on Miscellaneous Business. *Dr. Insley*.

Dr. S. W. Insley (Wayne): The Committee on Miscellaneous Business had three resolutions to consider. The first one was offered by *Dr. Robb* relative to the control and sale of the barbituric acid group of drugs. There is no point to reading the resolution.

The committee recommends its adoption, and I so move the adoption of this resolution.

Dr. F. T. Andrews (Kalamazoo): I second the motion.

The Speaker: Is there any discussion? Those in favor say "aye"; those opposed say "no." That portion is adopted.

Dr. Insley: The second matter coming to our attention was relative to an amendment to the By-laws regarding the reinstatement of members and as to their privileges to protection and the like. I don't know that we need to reread the resolution, unless somebody asks for it. The committee has recommended its adoption, and I so move this adoption.

Dr. Karl Brucker (Ingham): I support the motion.

The Speaker: Is there any discussion? Those in favor say "aye"; those opposed say "no." It is carried.

Dr. S. W. Insley: I now move the adoption of the amendments.

Dr. C. F. Snapp (Kent): I support it.

The Speaker: Is there any discussion? Those in favor say "aye"; those opposed say "no." It is carried.

Dr. Insley: The next resolution concerned a change in the By-laws regarding the fixing of the terms of the Councilors and the reading of the Councilor Districts of the counties involved in each district. The committee recommends the adoption of this resolution, and I so move the adoption of the resolution.

Dr. Karl Brucker (Ingham): I support the motion.

The Speaker: Is there any discussion? Those in favor say "aye"; those opposed say "no." It is carried.

Dr. Insley: The following resolution was presented by *Dr. Gorsline*, of Calhoun, relative to the employment of lay help, technicians and the like, and was subject to a little bit of discussion. After consultation with *Dr. Gorsline* and in talking it over again with the committee a slight modification was inserted in his wording of the resolution as a whole. I will read the first portion:

RESOLUTION

RESOLVED, That this House of Delegates of the Michigan State Medical Society does hereby record its opposition to any and all procedures whereby lay technicians or other agents of any hospital or other organization, except under direct professional direction, are employed to render services that are essentially professional and require the exercise of judgment, which judgment can only be acquired by regular medical training—and so forth.

The committee inserted in here, with *Dr. Gorsline's* approval, the one phrase as follows, "except under direct professional direction." I think that solves any question as to ambiguity of terms.

The committee as a whole recommends its adoption as just read. I so move its adoption.

Dr. Dean Myers (Washtenaw): I support the motion.

The Speaker: Is there any discussion? It is moved and supported that this portion of the report of the committee and recommendations be adopted. Those in favor say "aye"; those opposed say "no." It is carried.

Dr. Insley: I move the adoption of the report as a whole.

Dr. C. S. Gorsline (Calhoun): I support the motion.

The Speaker: Is there any discussion? Those in favor say "aye"; those opposed say "no." It is carried. You have adopted the recommendations of the committee. That concludes the work of the Committee on Miscellaneous Business.

The Committee on Reports of Committees, *Dr. L. F. Foster*, Chairman.

Dr. L. F. Foster (Bay): Mr. Speaker and Members of the House of Delegates: I have the report of the Committee on Reports of Committees.

The first is the report of the Radio Committee as published in the program. The committee recommends the adoption of this report and recommends that the activity be continued and the scope enlarged. I move its adoption.

Dr. L. J. Gariépy (Wayne): I support the motion.

The Speaker: Is there any discussion? Those in favor say "aye"; those opposed say "no." That portion of the report is carried.

Dr. Foster: Next is the report of the Woman's Auxiliary. I move the report be received and placed on file as presented in the program.

Dr. W. C. Ellet (Berrien): I support the motion.

The Speaker: It is moved and supported that the report be received and placed on file. Is there any discussion? Those in favor say "aye"; those opposed say "no." It is carried.

Dr. Foster: Report of the Committee on Preventive Medicine. Your committee recommends the acceptance of this report as made, and recommends that the activity be continued along the lines of its educational phase, and I so move.

Dr. Wm. J. Cassidy (Wayne): I support the motion.

The Speaker: Is there any discussion? Those in favor say "aye"; those opposed say "no." It is carried.

Dr. Foster: With reference to the report of the Cancer Committee, we recommend the acceptance of this report and particularly stress the recommendation that the newspaper articles be as impersonal as possible in order to avoid discrimination, and I so move.

Dr. Karl Brucker (Ingham): I support the motion.

The Speaker: Is there any discussion? Those in favor say "aye"; those opposed say "no." It is carried.

Dr. Foster: Committee on Therapeutics. Your committee recommends the adoption of the report, with the further recommendation that the members of the State Society avoid the use of drugs under trade names which tend particularly to exploit the public. I so move.

Dr. Roy H. Holmes (Muskegon): I support the motion.

The Speaker: Those in favor say "aye"; those opposed say "no." It is carried.

Dr. Foster: The legislative report. We recommend the acceptance of this report and all its recommendations. I so move.

Dr. J. L. Chester (Wayne): I support the motion.

The Speaker: Is there any discussion? Those in favor say "aye"; those opposed say "no." It is carried.

Dr. Foster: With reference to the resolution presented by Dr. Snapp, of Kent, which has to do with the Afflicted Children's Act, we recommend its adoption in its entirety. I so move.

Dr. H. J. Pyle (Kent): I support the motion.

The Speaker: Is there any discussion on this? Those in favor say "aye"; those opposed say "no." It is carried.

Dr. Foster: In the absence of any report from the Committee on Maternal Welfare, we have no recommendation.

There are, however, two more recommendations which we feel are contingent upon the subject which is a special order of business, and we have no recommendation to make at this time on those two resolutions.

The Speaker: You will be called on during the executive session for that portion of the report.

Dr. Foster: I move the adoption of the report as a whole.

Dr. S. W. Insley (Wayne): I support the motion.

The Speaker: Is there any discussion? Those in favor say "aye"; those opposed say "no." It is carried.

That finishes the reports of the regular standing committees of the House of Delegates.

Unfinished business. Has any member of the House of Delegates any unfinished business at this time?

The Speaker: Is there any further unfinished business?

Resolutions and new business. At this point, the Speaker will vouchsafe the information that this is your last opportunity to introduce resolutions except by unanimous consent of the House, or having been introduced by the Council, under which circumstances they might be introduced this evening.

Dr. Phillip Riley (Jackson): The Legislative Committee is very much interested in getting all the doctors in the State Society to work as one large Legislative Committee, and we think the time of the state meeting is wrong. We think it should be later in the year so that these delegates could be enthusiastic on election matters.

We are holding our House of Delegates meeting on election day, and I would safely bet that only one out of ten here have voted, which isn't a very good thing. We would like to recommend that the time of the meeting be moved ahead.

The Speaker: Your recommendation will be referred to the Council.

Are there any further resolutions, recommendations, or new business?

Dr. E. D. Spalding (Wayne): The State Society has been served for twenty-two years by a young man who has gone west, or is about to go west, and it behooves the society to take some look to the future as to the replacement of his valuable services in some way, and the resolution I am about to offer is with that end in view.

RESOLUTION

RESOLVED, That the office of Secretary of the Michigan State Medical Society be filled by a physician in an advisory capacity without remuneration; be it further

RESOLVED, That the Michigan State Medical Society employ a full-time lay executive secretary who has a background of medical organization work, journalistic experience, and legislative contacts; and be it further

RESOLVED, That the executive headquarters of the Michigan State Medical Society be moved to the capital of Michigan, and that appropriate offices and personnel be established in that city."

I move the adoption of the resolution.

The Speaker: The resolution will be referred to the Committee on Society Affairs.

Dr. B. T. Montgomery read a letter from the secretary of the Chippewa-Mackinac County Medical Society to the House of Delegates requesting that Dr. E. A. Cornell be made an honorary member of the society.

The Speaker: Is he at present an honorary member of his own society?

Dr. Montgomery: Yes, he is.

The Speaker: It is up to the House then.

Dr. C. K. Hasley (Wayne): I support that.

The Secretary: I think he is not an honorary member. He is a member emeritus. The amendments you adopted this morning make a distinction.

"Member emeritus. A physician who has been in practice for fifty years and has maintained a membership in good standing for twenty-five years may, upon application, become a member emeritus."

The Constitution also prescribes who honorary members shall be.

"Honorary members. The House of Delegates on recommendation of a county society may elect as an honorary member any persons distinguished for their services or attainments as doctors of medicine, or in the field of public health, or research, or other scientific work contributing to medicine. Honorary members shall not pay dues and shall not have the right to vote or hold office."

Dr. J. M. Robb (Wayne): Might I ask the Secretary if that applies also to members emeritus. Are they exempt from dues?

The Secretary: Yes. "Members emeritus. They shall be entitled to all the benefits and privileges of membership and shall be relieved from paying state dues."

The Speaker: The Speaker will announce that the doctor's name mentioned, Eliphalet A. Cornell, is duly qualified as an honorary member. Was there a motion made?

Dr. B. T. Montgomery (Chippewa): I made the motion.

The Speaker: Is there any discussion? Those in favor say "aye"; those opposed say "no." It is carried.

Dr. I. W. Greene (Shiawassee): The Shiawassee County Society would like to present the name of Dr. W. E. Ward for honorary membership. He has been secretary of our county society for twenty years, the longest of any secretary in the state. He has been health officer for a great many years. This is his fifty-first year of practice. He is still in active practice, and is health officer in the city of Owosso. He has probably done more than any one man to hold our county society together through troublous years. We would like very much to see him elected an honorary member of the State Society.

Dr. C. S. Gorsline (Calhoun): I support the motion.

The Speaker: Is there any discussion?

Dr. Wm. S. Reveno (Wayne): I wonder if Dr. Greene would prefer to recommend the election of Dr. Ward as a member emeritus rather than for honorary membership. His being in practice for fifty-one years perhaps qualifies him for that position rather than for honorary membership. At the same time, a man engaged in the practice of medicine and medical activities in general would perhaps like to continue his membership activities in the Society.

Dr. I. W. Greene (Shiawassee): I would like to ask Dr. Warnshuis which, in his opinion, would be the more suitable way of honoring Dr. Ward. He has come in contact with Dr. Ward for a great many years.

The Secretary: As Dr. Greene has said, Dr. Ward has been one of our most faithful county secretaries for a period of over twenty years, and he has done considerable for organized medicine and scientific medicine in Shiawassee County. He is a splendid man and a splendid fellow.

I feel that in the classification of membership there stands first honorary membership, then membership emeritus, and you could give to Dr. Ward the greatest tribute by making him an honorary member.

Dr. E. D. Spaulding (Wayne): I wish to inquire of Dr. Greene if he wishes to disfranchise his secretary. One of these things carries the right not to pay dues. The other carries the right not to vote.

Dr. I. W. Greene (Shiawassee): I think I would like to see him elected honorary member rather than member emeritus.

The Secretary: The member emeritus shall be relieved of paying state dues. He will be entitled to all the benefits and privileges of membership, whereas the honorary member shall not pay dues and shall not have the right to vote or hold office.

Dr. Greene: That being the case, that he has not the right to hold office, I would prefer he be made a member emeritus.

The Speaker: It has been moved that he be made a member emeritus.

Dr. Roy H. Holmes (Muskegon): I support the motion.

The Speaker: Is there any further discussion? Those in favor say "aye"; those opposed say "no." It is carried.

Are there any further resolutions, or new business?

Dr. H. M. Best (Lapeer): I have a request here from the Lapeer County Medical Society. I would like to have the Secretary read this for me.

The Secretary read a letter from the President and Secretary of the Lapeer County Medical Society to the House of Delegates requesting that Dr. F. A. Tinker be given a life membership.

Dr. Philip Riley (Jackson): I move that the doctor be made a member emeritus.

Dr. L. G. Christian (Ingham): I support the motion.

The Speaker: It is moved and supported that Dr. Tinker, from Lapeer county, be made a member emeritus in the Michigan State Medical Society.

Is there any discussion? Those in favor say "aye"; those opposed say "no." It is carried.

Is there any other new business, or resolutions?

That completes, according to the schedule, the second session. At the morning session you voted to make a special order of business at four o'clock this afternoon of the report of the Committee on Economics. Do you wish to recess until four o'clock, or do you wish to proceed?

Dr. Pyle: Mr. Speaker, I move that the motion made at this morning's session, that we meet at four o'clock this afternoon to consider the report of the Committee on Economics, be rescinded.

Dr. A. E. Stickley (Ottawa): I support the motion.

The Speaker: It is moved that the action taken at this morning's session to consider the four o'clock order be rescinded.

Is there any discussion? Those in favor say "aye"; those opposed say "no." It is carried.

Dr. L. J. Hirschman (Wayne): I move that we recess for five minutes.

Dr. John Wessinger (Washtenaw): I support the motion.

The Speaker: Moved and supported that we re-

cess for five minutes. Those in favor say "aye"; those opposed say "no." It is carried.

The meeting recessed for five minutes.

The Speaker: Gentlemen, you rescinded the motion of this morning. A motion to go into executive session is now in order.

Dr. Wessinger: I so move.

Dr. Wm. J. Cassidy (Wayne): I support the motion.

The Speaker: Is there any discussion? Those in favor say "aye"; those opposed say "no." It is carried that we go into executive session.

Inasmuch as we are starting all over, the Speaker will rule, if he hears no objection, with reference to the presence of those in the assembly room who are not members of the House of Delegates, if you wish a certain member to remain the Speaker will entertain a motion. Do I hear any objection to that ruling?

(By individual vote a number of members of the Society and Dr. Sinai were invited to attend the Executive Session.)

Dr. Andrews, of Kalamazoo, and Dr. Ellet, of Berrien, perform your duties.

The House is now constituted in executive session. The first order of business is the supplemental report of the Committee on Reports of Committees. *Dr. Foster.*

Dr. L. F. Foster (Bay): Mr. Speaker and Members of the House of Delegates: With reference to the report of the Committee on Medical Economics, your committee has reached no conclusions in reference to the reports of the economic committee because of its stupendous nature, but it is the consensus of opinion of this committee that the second suggestion as presented by the economics committee be considered as the possible solution, with the addition of the words as follows: "The House of Delegates may postpone action on health insurance, continue the Committee on Medical Economics, and hold itself ready for a special call if and when national or state programs of health insurance appear imminent to this House of Delegates."

This committee discourages the further expenditure of funds for that work, excepting the regular funds of the Michigan State Medical Society if and when they may be made available by this House of Delegates.

I move the adoption of that report.

Dr. L. G. Christian (Ingham): I support the motion.

The Speaker: Is there any discussion?

Dr. Wm. J. Cassidy (Wayne): It seems to me we should have some kind of policy that would be rather elastic to fit the changing trends of the times. If you wait until the house falls on top of you or until the fire starts, you are going to be too late. That has been the policy of your national association, our state and county societies. We have always waited until the cards tumbled about our heads, and then rush pellmell without any organization to try to bring things to the profession, and as a rule we end up by getting nothing. It seems to me we ought to have some kind of an elastic plan and not bind the profession to a hard and fast, narrow-gauge track, but it should be of sufficient elasticity that it can take care of the man who is practicing in the urban district and the man who is practicing in the larger metropolitan areas of the state. They are two entirely different problems.

In the northern part of the state, about eighty per cent of the population is now on the welfare rolls. Taxes are insufficient to support them. Consequently, the metropolitan areas, such as Detroit, Battle Creek, and Flint, must of necessity pour enough money into the coffers of the state to support the barren areas in the northern part of the

state which will never produce enough money to pay the doctor. Consequently those men practicing in that part of the state are going to be a little enthusiastic toward state medicine.

You have to have an elastic thing so you can take care of these men, and not commit the Society to a definite, set policy that cannot be changed as the changing trend of the times warrant.

This economic situation is going to be over in a short period of time. It isn't going to last forever. We have been through them before. When we come down to actualities, I don't think we are going to change the status in the next one hundred years very much. The law of general economics or the law of averages usually levels it.

If the industrialists talk socialized medicine, let the medical profession talk socialized industry. It is easy to fight fire with fire. We can get up and hoot from the opposite side of the fence. If they want to socialize the doctors, let us socialize the industrialists. It is a poor rule that won't work both ways. I think a great deal of this talk of the socialization of the medical profession from the other side of the fence will cease if you start nibbling a little at their general welfare and their general control of things as they are at the present time, in wanting to regiment everything to bureaucratic control from the national government down.

Why try to apply European conditions to the United States? It can't be done. We don't need them. We are self contained. We use ninety per cent of the products we manufacture, and what good is that little ten per cent? Let us stay home and attend to our own business and let Europe alone in regard to all their socialization and in regard to their business, and we can live and get along a darned sight better.

The Speaker: Is there any further discussion?

The question was called for.

Dr. W. C. Ellet (Berrien): Mr. Speaker, will you repeat that motion, please?

The Speaker: Read the recommendation of your committee, of which you moved the adoption, and the adoption of which becomes an action.

Dr. L. F. Foster (Bay): The recommendation relative to this is the recommendation of suggestion No. 2, as put forth this morning by your Economics Committee, with the words added at the bottom: "The House of Delegates may postpone action on health insurance, continue the Committee on Medical Economics, and hold itself ready for a special call if and when national or state programs of health insurance appear imminent to this House of Delegates."

Then there were the recommendations of the committee beyond that to this effect: This committee discourages the further expenditure of funds in this work, excepting the regular funds of the Michigan State Medical Society if and when they may be made available by this House of Delegates.

Dr. Wm. S. Reveno (Wayne): Just to correct one word in the proposed resolution. I think the word "may" in the very first sentence—"The House of Delegates may postpone action"—should have substituted for it the word "shall."

The Speaker: You are making that as an amendment, or will you accept that?

Dr. Wm. S. Reveno (Wayne): This is a recommendation from the Committee on Economics.

The Speaker: Then you would recommend the substitution of the word "shall" for the word "may" in the recommendation made by this committee.

Dr. L. O. Geib (Wayne): I support the amendment.

The Speaker: The amendment is the substitution of the word "shall" for the word "may," in the sentence which Dr. Foster will read you. Will you

read that as it would be if amended? Read that part and call attention to the substitution.

Dr. L. F. Foster (Bay): "The House of Delegates shall postpone action on health insurance, continue the Committee on Medical Economics, and hold itself ready for a special call if and when national or state programs of health insurance appear imminent to this House of Delegates."

The Speaker: You are changing the first word "may" to "shall." You are voting on that part, and that part alone.

Dr. E. D. Spalding (Wayne): Point of information. At this point is the second part of the suggestion of the committee incorporated in the motion we are now voting on?

The Speaker: You are voting on that as an amendment and the substitution of the word "shall" for "may."

Dr. E. D. Spalding (Wayne): The printed thing here marked "Second" is part of the recommendation of the committee, and then there is a second sentence. Is the second sentence, the suggestion of the committee, also part of the motion we are now voting on?

The Speaker: You are not voting on that part at the present time. You are only voting on the insertion of the word "shall" in place of "may." That is all you are voting on right now.

The question was called for.

The Speaker: Those in favor of the substitution of the word "shall" for the word "may" say "aye"; those opposed say "no." It is carried.

Is there any further discussion on the main motion? Are you ready for the question?

Dr. Spalding: Mr. Speaker, is the second sentence, which has the recommendation of this committee concerning funds, part of this motion as now before the House?

The Speaker: The Chair would so interpret it.

Is there any further discussion?

The question was called for.

Dr. R. H. Pino (Wayne): Does this matter of "shall" or "may" apply also to the use of funds other than those of the State Society? It is "shall" there, is it?

Dr. L. F. Foster (Bay): It is "may"—"If and when they may be made available by the House of Delegates." The use of "may" there is in a different sense.

Dr. R. H. Pino (Wayne): They may use other funds?

Dr. Foster: No.

Dr. Wm. J. Cassidy (Wayne): Is this left to the House of Delegates to decide when they meet?

The Speaker: The House can only meet as prescribed by the Constitution.

The Secretary: According to the By-law, upon a petition either by the Council or by a petition of a certain number of the House of Delegates.

Dr. Cassidy: Will you read the section in regard to that?

Dr. Foster: We didn't attempt to prescribe how the House of Delegates shall be called. That is prescribed in the By-laws. We have nothing to do with that.

The question was called for.

The Speaker: Those in favor say "aye"; those opposed say "no." It is carried. (Applause.)

Dr. Foster: Mr. Speaker, we have before us two other resolutions, one from Berrien County and one from Wayne County. Your committee finds that these resolutions are contingent upon the disposition of the Mutual Health Plan. The committee recognizes the virtue of both resolutions, but feels that a recommendation is not necessary after the disposition of the Mutual Health Plan.

I move the adoption of the committee's report as a whole.

Dr. Wm. J. Cassidy (Wayne): I support the motion.

The motion was supported by several others.

The Speaker: Is there any discussion? Those in favor say "aye"; those opposed say "no." It is carried.

Now you may table the resolution introduced by Dr. Ellet of Berrien.

Dr. Phillip Riley (Jackson): I move that the resolution introduced by Dr. Ellet of Berrien be rejected.

The Speaker: Do you wish to say "rejected" or "laid on the table"?

Dr. James O'Meara (Jackson): I support the motion.

Dr. Riley: "Rejected."

The Speaker: Is there any discussion? Those in favor say "aye"; those opposed say "no." The Chair is in doubt.

The Chair calls for a standing vote. Those in favor of rejecting the resolution introduced by Dr. Ellet stand and remain standing until the Secretary has counted you. For your own information, I will ask the Secretary to give a brief outline of what that is.

The Secretary: The resolution introduced by Dr. Ellet of Berrien County protests against the action of this House of Delegates approving any plan of Mutual Health Service and Health Insurance, state medicine, and so forth.

Dr. Karl Brucker (Ingham): It seems to me that savors a little bit of discourtesy to the Berrien County Medical Society to use the word "reject." I don't like it. That is the reason I am going to vote against it, and then we will have a motion undoubtedly to lay it on the table, which looks better to me.

Dr. J. L. Chester (Wayne): Can't we move that it be tabled rather than rejected?

The Speaker: A motion to table is always in order.

Dr. Chester: I move that the resolution be tabled.

Dr. L. J. Gariety (Wayne): I support the motion.

The Speaker: That motion is non-debatable. Motion is made to table Dr. Ellet's resolution. Those in favor say "aye"; those opposed say "no." It is carried.

The Reveno resolution. Some action must be taken on that resolution. I will ask the Secretary to state the essence of the other resolution.

The Secretary:

"RESOLVED, That the House of Delegates of the Michigan State Medical Society oppose the participation by the members of the Michigan State Medical Society in any scheme or plan of health insurance or social medicine, experimental or otherwise, until such a time as all non-medical agencies or persons engaged in some phase of the practice of medicine have been placed under such adequate control by the state or federal government as to eliminate them as factors of danger to the public health; and be it further

"RESOLVED, That every member of the Michigan State Medical Society be requested to sign a pledge which shall embody the above mentioned principle."

Dr. W. C. Ellet (Berrien): I move that this resolution be tabled.

Dr. Vivian Vandeventer (Marquette): I support the motion.

Dr. Roger V. Walker (Wayne): I don't think many of the members here realize—

The Speaker: A motion to table a resolution is not debatable.

Those in favor of tabling the resolution say "aye"; those opposed say "no."

The Chair is again in doubt. Standing vote. A standing vote to table this resolution will now be

taken. Those voting in favor of tabling this resolution will stand and remain standing until such time as the Secretary has completed the count. (Forty-five.)

Be seated. Those opposed to tabling the resolution stand. (Fourteen.)

The motion is carried and the resolution is tabled by a vote of forty-five to fourteen.

Is there any further business to come before this executive session? If there is no further business to come before this executive session, the Speaker will entertain a motion to rise from executive session.

Dr. L. J. Hirschman (Wayne): I move we rise from executive session.

Dr. C. S. Gorsline (Calhoun): I support the motion.

The Speaker: Those in favor say "aye"; those opposed say "no." It is carried.

You have now arisen from executive session and are in regular session.

Having completed the business of the second session, again the Chair will ask if there is any other unfinished business.

Dr. Wm. S. Reveno (Wayne): I would like to introduce a resolution on the part of the Wayne delegation. I would like to recommend the election of Walter Cree of Detroit, Wayne County, as a member emeritus of the State Society.

Dr. E. D. Spalding (Wayne): I second the motion.

Dr. H. W. Yates (Wayne): I second the motion.

The Speaker: Under unfinished business, the name of Walter Cree is recommended for membership emeritus by the House of Delegates.

Those in favor say "aye"; those opposed say "no." It is carried.

Dr. W. C. Ellet (Berrien): To show that Berrien County doesn't feel bad, we brought in a nice basket of peaches for those who didn't get any.

The Speaker: The peaches are also tabled.

Is there any further unfinished business? If there is no further unfinished business, the Chair will entertain a motion to recess until seven-thirty this evening.

Dr. A. D. Sharp (Calhoun): I move we recess until seven-thirty this evening.

The motion was regularly supported.

The Speaker: The motion is to recess until seven-thirty this evening.

Those in favor say "aye"; those opposed say "no." The House is recessed to meet promptly at seven-thirty.

The meeting recessed at four-ten o'clock.

HOUSE OF DELEGATES

Tuesday Evening, September 11, 1934

The recessed meeting reconvened at seven thirty-five and was called to order by the Speaker.

The following delegates and alternates were present:

Alpena—F. J. O'Donnell
 Barry—M. R. Kinde
 Bay-Arenac-Iosco—L. F. Foster
 Berrien—W. C. Ellet
 Calhoun—C. S. Gorsline, A. T. Hafford
 Cass—W. C. McCutcheon
 Chippewa-Mackinac—B. T. Montgomery
 Eator—A. G. Sheets
 Genesee—George Curry, Carl Moll, Frank Reeder
 Grand Traverse-Leelanau—E. F. Sladek
 Gratiot-Isabella-Clare—T. J. Carney
 Houghton—George M. Waldie
 Huron-Sanilac—David D. McNaughton
 Ingham—L. G. Christian, Karl Brucker
 Jackson—Phillip Riley
 Kalamazoo-Allegan-Van Buren—F. T. Andrews, C. Ten Houten, R. G. Cook.
 Kent—A. V. Wenger, H. J. Pyle, R. H. Denham, V. M. Moore, C. F. Snapp
 Lapeer—H. M. Best

Livingston—Harry G. Huntington
 Luce—H. E. Perry
 Manistee—A. A. McKay
 Marquette-Alger—Vivian Vandeventer
 Mason—L. W. Switzer
 Mecosta—G. H. Yeo
 Monroe—P. D. Amadon
 Muskegon—Roy H. Holmes
 Oakland—Robert Baker
 Otsego-Montmorency, Crawford-Oscoda-Roscommon-Ogemaw—C. R. Keyport
 Ontonagon—H. B. Hogue
 Ottawa—A. E. Stickley
 Saginaw—G. H. Ferguson, F. J. Cady
 Shiawassee—L. W. Greene
 Tuscola—O. G. Johnson
 Washtenaw—John Wessinger, Dean Myers
 Wayne—Wm. J. Cassidy, R. H. Pino, A. E. Catherwood,
 R. M. McKean, L. J. Hirschman, J. L. Chester, H. W. Plaggemeyer, W. R. Clinton, L. J. Garipey, S. A. Flaherty,
 A. P. Biddle, L. O. Geib, L. T. Henderson, C. K. Hasley,
 Wm. S. Reveno, Roger V. Walker.

The Speaker: We will now hear the final report of the Chairman of the Credentials Committee.

Dr. L. T. Henderson (Wayne): We have seventy-three delegates registered at this session as the final report of the Credentials Committee.

Dr. John Wessinger (Washtenaw): I move its adoption.

Dr. G. H. Yeo (Mecosta): I support the motion.

The Speaker: Moved and supported that the final report of the Credentials Committee be adopted. Is there any discussion? Those in favor say "aye"; those opposed say "no." It is carried.

Roll call.

The Secretary: Mr. Speaker, I hold in my hand 62 signed roll calls for this third session of the House of Delegates. I suggest that they constitute, inasmuch as there is a quorum, the roll call for this session.

The Speaker: If I hear no objections, the Chair will consider that as the official roll call of this session. Hearing no objections, that constitutes the roll call.

Reports of reference committees. Is there any further report from the Committee on Council Reports, Karl Brucker, Chairman?

Dr. Karl Brucker (Ingham): No report.

The Speaker: The Committee on Society Business, George Curry, Chairman.

Dr. George Curry (Genesee): Mr. Speaker and Members of the House of Delegates: The resolution that was presented this afternoon by the Wayne delegation:

"RESOLVED, That the office of Secretary of the Michigan State Medical Society be filled by a physician in an advisory capacity without remuneration; be it further

"RESOLVED, That the Michigan State Medical Society employ a full-time lay executive secretary who has a background of medical organization work, journalistic experience, and legislative contacts; be it further

"RESOLVED, That the executive headquarters of the Michigan State Medical Society be moved to the capital of Michigan and that appropriate offices and personnel be established in that city."

It was the opinion of our committee that a problem as weighty as this should be transferred to the Council of the Michigan State Medical Society for their consideration, and I so move, Mr. Speaker, that that be done.

Dr. A. E. Stickley (Ottawa): I support the motion.

The Speaker: Is there any discussion?

Dr. L. J. Garipey (Wayne): At the most, all we can do is put forth the recommendation to the Council. So I think we ought to make our recommendation to the Council as to what we want.

The Speaker: Do I understand that recommendation embodies that?

Dr. George Curry (Genesee): I will accept that.

The Speaker: Would you like to have him read that again?

Dr. Curry: We recommend that the information contained in this resolution be transferred to the Council for their consideration. It is not the province of the House of Delegates to pass upon this.

The Speaker: Is the recommendation of the committee perfectly clear to everyone? It has been moved and supported. Those in favor say "aye"; those opposed say "no." It is carried.

Committee on Society Business. Is there any further report?

Committee on Miscellaneous Business. Dr. Insley. Are there any further reports? (Nothing was referred to them.)

Committee on Reports of Committees. Dr. Foster. (Dr. Foster was absent.)

The next order of business is elections. There does not appear to be a complete attendance of the House of Delegates, so as a matter of information the Chair would like to know whether you wish to wait a few minutes longer, or do you wish to proceed to the election? Hearing no objection, the Chair will proceed.

ELECTIONS

Nominations for President-Elect are now in order.

Dr. C. F. Snapp (Kent): Mr. Speaker and Members of the House of Delegates: I should like to place in nomination for the office of President-Elect one of the members of our Society who is probably best known throughout the state of any member in the whole organization. He is not only well known because of the fact that he has been a tireless worker in the Society, one of the hardest workers among us for organized medicine and for all that organized medicine stands for, but he has also reached high scientific attainments in his special field. As I say, he is known throughout the state for his work in our State Society, but he is known nationally for his work in the scientific field.

There is no man perhaps who could fill this position any better than the man I want to nominate, and we feel that Wayne County should be recognized this year in the selection of a President. It gives me great pleasure to place in nomination the name of Dr. Grover C. Penberthy. (Applause.)

Dr. George Curry (Genesee): I should like to have the pleasure of seconding that nomination.

Dr. Phillip Riley (Jackson): I would like to second Dr. Penberthy's nomination.

Dr. I. W. Greene (Shiawassee): I also want to second that nomination.

Dr. Karl Brucker (Ingham): I would also like to second the nomination.

Dr. J. L. Chester (Wayne): What has been said of Dr. Penberthy is perfectly true. He is one of the very good men of the Society. He has been active, and most effectively, for the Society.

The Wayne delegation had a caucus this afternoon and decided on a man who has been active in the Society for the last thirty years. He was chairman of the Medico-Legal Committee, and is a lawyer as well as a doctor. He was president of the Wayne County Medical Society. He has always worked for the benefit of the Society as a whole. He is a man well known not only in Detroit but throughout the state. He has done a great deal of literary work and would be a great credit to the Society.

Therefore, it gives me great pleasure, on behalf of Wayne County, to place in nomination William J. Stapleton, Jr. (Applause.)

Dr. A. L. Callery (St. Clair): I second the nomination of Dr. Stapleton for President-Elect.

Dr. R. H. Denham (Kent): I move that nominations be closed.

Dr. W. C. Ellet (Berrien): I support that motion.

Dr. George Curry (Genesee): I support that motion.

The Speaker: Moved and supported that nominations be closed. Those in favor say "aye"; those opposed say "no." It is carried.

I will appoint the following as tellers: Drs. O'Meara, Carney and Andrews.

Ballots are being distributed. The candidates nominated are Drs. Penberthy and Stapleton.

Has everyone voted who is entitled to vote? If everyone has voted who is entitled to vote, the Chair declares the ballot closed.

The Secretary: Mr. Speaker, 62 delegates are entitled to vote. Forty-four ballots were cast for Dr. Penberthy, and 17 for Dr. Stapleton, making a total of 61 ballots.

The Speaker: Gentlemen, you have elected Dr. Penberthy as President-Elect. (Applause.)

I will call upon the special committee that was appointed this morning to draft a suitable statement by the House of Delegates relative to the retiring Secretary. The chairman of that committee is Dr. Biddle.

Dr. A. P. Biddle, reporting for the special committee, read a resolution.

RESOLUTION

September 11, 1934

Frederick C. Warnshuis, M.D., D.Sc., Secretary of the Michigan State Medical Society since 1913 and Editor of THE JOURNAL of the Society for sixteen years, is to leave us to assume the position of Secretary-Treasurer to the California Medical Association. It is befitting, therefore, for us to place on record our deep appreciation of the work he has so disinterestedly done throughout the years under this secretaryship and editorship.

He brought to the position an energy and direct action which soon placed Michigan in the front rank of State Associations and THE JOURNAL among the best edited. His work among the County Societies was as untiring; his sincerity infused their members with his own determination to grapple with the problems which beset every Society.

As a member of the State Board of Registration in Medicine and its Secretary he was a strong factor in keeping the profession on a high plane and in his work with legislative committees he did much to place on the Statutes laws to safeguard the public and the profession or to defeat legislation inimical to these public interests.

In 1919 he was elected Speaker of the House of Delegates of the American Medical Association and has ever since served in that capacity. These years of experience as a presiding officer have reflected in a greater ability to serve his State Society and in no small degree to inaugurate and to execute its policies.

His service during the World War as Chief of the Surgical Service, Base Hospital No. 99, American Expeditionary Forces, and later its Commanding Officer, demonstrated his ability as a Surgeon and Executive, all of which added emphasis to his organizing genius.

We shall miss his strong personality, unflinching fairness and firmness in our deliberations of the ever recurring, perplexing problems which the profession is brought to face.

BE IT RESOLVED, therefore, that we, the Members of the House of Delegates in formal session, herewith record our appreciation of his services, our sincerity in the expression of a deep loss and our best wishes for success and happiness in his new field of endeavor.

BE IT RESOLVED, further, that a copy be transmitted

to the California Medical Association and one to the American Medical Association.

CARL F. MOLL

JOHN WESSINGER

ANDREW P. BIDDLE, *Chairman.*

Dr. H. J. Pyle (Kent): I move the adoption of this resolution.

Supported by several.

The Speaker: Those in favor say "aye"; again, "aye"; again, "aye."

The motion was carried unanimously, and the audience arose, applauded and cheered.

The Speaker: Inasmuch as our Secretary is partially overcome, I will allow him to pick up a little bit while we have another part of the program. I will call on Dr. Baker.

Dr. Robert Baker (Oakland): Gentlemen of the House of Delegates: I, too, have a message to give. This is the report of the committee appointed by the Council.

Dr. Warnshuis, in the name of the officers and the Council of the Michigan State Medical Society we present you these small tokens of our regard and respect. We hope you may have many years of progressive success and happiness. It is my pleasure to present to you, Dr. Warnshuis, this and this. (Presenting a watch and traveling bag.)

The Speaker: A wrist watch. It has some engraving on it. I hope I read the right engraving. "Frederick Warnshuis, from the Council of the Michigan State Medical Society, 1934." (Applause.)

RESPONSE OF THE SECRETARY

The Secretary: Mr. Speaker, Dr. Biddle, Dr. Baker, my Friends of this House of Delegates of the Michigan State Medical Society, and Members of the Council: There are times, and this is one of them, when words fail to express the thoughts that arise within one or the emotions that are created by a demonstration such as you have given me this evening. Oliver Wendell Holmes once said that there were three occasions in life when one might speak about himself and consider himself the center of interest. Those three occasions were when he was born, when he was christened, and when he was buried. Then he goes on, in his farewell address to his class of Harvard, and says: "There are other occasions when one may be justified in reminiscing some of the events of life and not be considered egotistical."

So with that precedent this evening possibly I could reminisce over this period of twenty-two years in which I have been privileged to serve the Michigan State Medical Society and its individual members. I prefer not to do so.

It is not an easy thing to sever oneself from an association with friends that has been going on for a period of some thirty-two years. One is filled with many conflicting emotions.

I know I might go back in the by-paths of our organization and its activities and brush away the foliage that time has grown over the footsteps of those who have traveled on these by-paths. If there is anything I have done for the good of the profession of Michigan, I am very humble in saying, and sincerely so, that it wasn't because of me, but it was because of the inspiration of such men as Sawyer and Burr, of Vaughan and Darling, of Baker, of Dodge and Carstens, of Kiefer and Welsh, and of Laubaugh and Kay, men who led you and inspired you as well as they did me. This evening I wish to pay tribute to their memory, and to record our indebtedness for that which they gave for organized medicine in Michigan.

Then we are fortunate in still having with us men like Biddle, Petersen, Hume, Moll, Le Fevre, Hirschman, Robb, Connor, Brook and Randall, men who, too, have given of themselves and of their time, and who by their action and by their self-sacrifice have made Michigan what it is in organized medicine today. It has been my humble privilege to have been associated with them, and if I have served I am grateful that I have been able to add my bit.

I am going away—yes, but I am coming back. Mr. Speaker, as I grasp your hand, through you I grasp the hand of every member of our state organization. I am not going to say good-bye. I am only going to wish that fortune may be kind to you, and that fate may deal gently with you. We shall meet again.

The audience arose and applauded.

ELECTION OF DELEGATES TO A. M. A.

The Vice Speaker took the chair.

The Vice Speaker: You will observe in your program that the next order of business is that of the election of delegates and alternates to the A. M. A. If you turn to Page 5, you will observe that those delegates whose terms expire this year are Gorsline of Battle Creek, Brook of Grandville, and Luce, your Speaker, of Detroit.

If you are ready, the Chair will be glad to receive nominations for three delegates to the A. M. A.

Dr. George Curry (Genesee): I would like to place the name of Dr. Brook of Grandville as a delegate to the A. M. A. Dr. Brook has been a past President of this Society and certainly has given a long period of time of excellent service, and I think he deserves our consideration for nomination.

Dr. F. T. Andrews (Kalamazoo): Mr. Speaker and Members of the House of Delegates: A few minutes ago you listened to an eloquent speech. It falls far beyond my ability to present to you in any certain words the ability of the man I am about to nominate.

Two years ago I had the privilege of nominating this man, and in that time he has served you well. He has presented himself at the A. M. A. with confidence, and has made the position of the state of Michigan one in which it is to be envied. The name of this man who has served you so well is Dr. C. S. Gorsline of Calhoun County.

Dr. L. O. Geib (Wayne): I wish to nominate a man who needs no introduction, a man who is always ready to take the right side of any question and fight and see it through. I nominate Dr. Ellet of Berrien County.

Dr. Phillip Riley (Jackson): Mr. Speaker, two-thirds of the area of the state of Michigan is north of a line from Flint to Grand Rapids, and there is no representative above that line who represents us to the A. M. A.

I would like to nominate Claude Keyport of Grayling for the office of delegate. In view of the fact that for many years we had no delegate from the upper peninsula for northern Michigan, I would like to see a man represent that territory.

The Vice Speaker: Dr. Keyport of Grayling has been nominated.

Dr. L. G. Christian (Ingham): It has been said that we must have age in the House of Delegates of the A. M. A. We in this body have seen an individual who has impressed us with his sincerity, his ability on his feet, his clear thinking, and a man who can mix well.

I am about to present the name of an individual who has gone far in your estimation and mine, a man we believe can go farther in the A. M. A. I would like to present the name of Dr. Andrews of Kalamazoo. (Applause.)

The Vice Speaker: Are there any other nomination?

Dr. Roger V. Walker (Wayne): I want to nominate a man who all today has shown his ability to conduct meetings to the satisfaction of all of us, and a man who represents the State Society—Henry A. Luce.

The Vice Speaker: Dr. Luce of Wayne has been nominated.

Are there any other nominations?

Dr. J. M. Robb (Wayne): How many delegates are there?

The Vice Speaker: There are three to be elected.

Dr. Robb: Is there one to take the Secretary's place?

The Vice Speaker: I am guided by the program, Dr. Robb, in which nothing is stated with reference to the Secretary. How about that, Mr. Secretary?

Dr. L. J. Hirschman (Wayne): I think I can clarify this a little bit. We have coming up under unfinished business tonight an amendment to the By-laws, which would provide for a delegate to succeed Dr. Warnshuis. The amendment, according to the order of business, will not be brought up until this election is over. I believe, in order to do this in parliamentary fashion, it is well to complete this election at this time and then under unfinished business, if, as and when you pass this amendment, to nominate a man to fill that vacancy. The vacancy is not as yet evident, so we can't do anything about it until we get to unfinished business.

Dr. Karl Brucker (Ingham): I move that nominations be closed.

Dr. R. H. Denham (Kent): I second the motion.

The Vice Speaker: You all understood Dr. Hirschman's statement that the fourth one to substitute for the Secretary will be taken care of later.

Is there any discussion? If not, those in favor of the motion will say "aye"; contrary, "no." So carried.

The tellers will please distribute the ballots. You vote for three at this time.

Dr. H. J. Pyle (Kent): Do we understand that the three receiving the highest vote are elected?

The Vice Speaker: What is the wish of the House?

Dr. John Wessinger (Washtenaw): I move that the three highest nominated be elected delegates to the A. M. A.

Dr. L. J. Gariepy (Wayne): I support the motion.

The Vice Speaker: You have heard the motion as supported. Is there any discussion? If not, those in favor of this motion vote by saying "aye"; contrary, "no." So carried.

Dr. F. T. Andrews (Kalamazoo): Inasmuch as I am a candidate, I desire that another teller be appointed.

The Vice Speaker: If it is the pleasure of the House, the Speaker will appoint another teller.

Dr. Karl Brucker (Ingham): Mr. Speaker, I would move that the three defeated candidates be the alternate delegates.

The Vice Speaker: I am sorry, but that is a separate election. The Chair so rules.

I wonder if Dr. Wenger of Kent will please substitute for Dr. Andrews of Kalamazoo. Likewise, I think we have a teller who has not worked. Will Dr. Huntington of Howell substitute for Dr. O'Meara, who is indisposed?

You are voting for three on one ballot, and not one.

Has everyone voted who is entitled to vote? If so, I declare the ballot closed.

The Secretary: Mr. Speaker, the ballot cast shows 35 ballots cast for Dr. Brook; 39 for Dr. Gorsline; 14 for Dr. Ellet; 32 for Dr. Keyport; 26

for Dr. Andrews; and 43 for Dr. Luce. The highest is Dr. Luce with 43; second, Dr. Gorsline with 39, and Dr. Brook with 35. (Applause.)

The Vice Speaker: Members, you have seen and heard the results of this election. I therefore declare Drs. Luce, Gorsline and Brook so elected as delegates to the A. M. A. (Applause.)

The next order of business is that of the election of alternates.

Dr. A. P. Biddle (Wayne): Mr. Chairman, it is always that in the election of those who represent us we should have different types of men.

I wish to nominate one who is an old character, as sincere a member of this Society as it has ever been my privilege to know. He comes from a small place. He knows the rural district. He knows what they need.

I have the pleasure of nominating Dr. T. E. Gurse of Marine City. (Applause.)

The Vice Speaker: May I remind you that there are three alternates to be elected, and according to the pamphlet those whose terms expire are the ones whom Dr. Biddle just placed in nomination, Dr. De Gurse of Marine City, Dr. Denham of Grand Rapids, and Dr. Ellet of Benton Harbor.

The Chair will entertain further nominations.

Dr. A. V. Wenger (Kent): I nominate Dr. Denham of Kent as alternate.

Dr. C. S. Gorsline (Calhoun): I would like to place in nomination the name of Dr. Andrews of Kalamazoo as alternate.

Dr. Roger V. Walker (Wayne): I move that nominations be closed.

The Vice Speaker: There is a motion before the House.

Dr. A. P. Biddle (Wayne): I second the motion.

The Vice-Speaker: The motion is that nominations for alternate delegates be closed. If there is no discussion, all those in favor say "aye"; contrary, "no." The "ayes" have it, and so carried. Ballots are closed.

Dr. L. J. Hirschman (Wayne): I move you, sir, that the Secretary be instructed to cast the ballot of this House for the three candidates named.

Several supported the motion.

The Vice Speaker: It has been moved and supported that the Secretary cast the ballot of the House of Delegates for these three names.

Is there any discussion? All those in favor say "aye"; contrary, "no." It is carried.

The Secretary: Mr. Speaker, your Secretary casts the ballot of this House for Dr. De Gurse, Dr. R. H. Denham, and Dr. F. T. Andrews as alternate delegates to the American Medical Association.

The audience arose and applauded as President-Else Penberthy entered the room.

Dr. J. M. Robb (Wayne): I arise to a point of order. In the matter of electing alternate delegates, isn't it true that the alternate with the highest number of votes should take the place of the actual delegate who doesn't go?

The Secretary: I will answer that, Dr. Robb. You are electing your delegates at large, and therefore they can take anybody's place.

The Vice Speaker: The Chair therefore declares these three men elected as alternate delegates to the A. M. A.

Dr. H. J. Pyle (Kent): I would like to rise to a point of order. I can see how a situation could arise where one of these three men might be incapacitated. Who is going to determine who is going to be his alternate? This thing has come up before and caused dissatisfaction in the Society. I wish somebody would discuss it. Who determines that? This is the point Dr. Robb brought up, and I think it should be discussed.

The Secretary: The only thing I can say, Mr.

Speaker, is that in the past in determining who should serve in my capacity the Council has designated the alternate who should so serve.

Dr. Pyle: I don't think that is a thing for the Council to determine. It is a matter for the House of Delegates. If we don't know how to do it in our elections, we had better start all over.

The Vice Speaker: So far as my judgment is concerned, that probably would be something new to come under modification of the By-laws or the Constitution, if there is nothing in there quoting on it. My knowledge is nil on the subject.

Dr. E. D. Spalding (Wayne): May the election be reconsidered and the House vote on the order of their choice for delegate?

Dr. Karl Brucker (Ingham): I support the motion.

Dr. Phillip Riley (Jackson): If everybody votes for three, as he is entitled to, it would be a tie vote.

The Vice Speaker: I really can't see that we are getting anywhere. If a few fellows vote for only one, he is the leading man, but if everybody votes for three, and you are entitled to vote for three, it will be a tie vote and will be the same as it is now.

Dr. Roger V. Walker (Wayne): If you are going to have one ballot, can't you ballot one, two and three and indicate your choice? The highest number would be the first one, and you can indicate what you want first, second and third.

The Vice Speaker: There is a motion before the House by Dr. Spalding of Wayne.

Dr. Spalding: That the election be reconsidered, and the House of Delegates make their choice in the order of one, two and three in their order.

Dr. L. J. Hirschman (Wayne): Mr. Speaker, I dislike very much to take exception to one of my distinguished colleagues of Wayne, but you can't reconsider an election. The men have been duly elected and so declared by the presiding officer. However, that can be determined very easily in a very simple manner, as a good sportsman like you knows. I would suggest that these three gentlemen come forward and draw lots as to their order of precedence and that will settle the whole thing.

Dr. H. J. Pyle (Kent): I have never been an obstructionist. The more you stick to parliamentary rule the better the organization will get along. I am tickled to death these men were elected, but I do believe we should decide how they shall serve. I think Dr. Spalding is right. I think Dr. Hirschman's suggestion is wonderful, because I do not believe it should be vested in seven or eight men to say who shall go. I am making the suggestion that we have some definite way of determining who shall go as alternate. I am not an obstructionist, but for the good of organized medicine I make that statement. I think the suggestion of Dr. Hirschman is good, if these gentlemen will rise and let it be determined in that way.

Dr. F. T. Andrews (Kalamazoo): Personally, I am willing to gamble with the goddess of chance.

Dr. T. E. De Gurse (St. Clair): As one of the nominated alternates, I am willing to draw cuts.

The Vice Speaker: I don't think one wants to be shown favoritism over the other at all. Will those three gentlemen who were elected alternate delegates please come forward? (Applause.)

The Secretary: Mr. Speaker, I have three slips of paper on which their names appear. I suggest they be put in a hat, shaken up, and allow them to draw, and the order in which they draw is the order of their seniority.

The Vice Speaker: If it is not improper, I will ask Dr. Biddle to do the drawing. It is the wish of the Chair that the first name drawn shall be listed as No. 1 choice of delegate. The second name drawn is second, and No. 3 third.

The name that I read on this ticket is De Gurse. (Applause.)

The name that I read on this ticket is Andrews, and Denham for third.

May we deviate from the ordinary routine of business, gentlemen, for just a moment. I know you want to hear a word from a gentleman who has been sitting here shivering ever since he was elected. Shall we now hear from Dr. Penberthy?

The audience arose and applauded.

PENBERTHY ACCEPTS OFFICE OF PRESIDENT-ELECT

President-Elect Penberthy: Mr. Vice Speaker, Delegates, Officers, Ladies and Members of the Profession: You have extended a singular honor to Wayne County, and for Wayne County I express my appreciation.

I have attended meetings of the House of Delegates for a good many years, and one can't help but be impressed with the kindly spirit that prevails at present. The feeling between the State and the Wayne County group is excellent. Let's hope it continues. I think in some respects there has been perhaps a little paranoia on the part of the out-state men against Wayne County, and the same may perhaps be said of the Wayne County group. However, it is our wish that we all work as one, and I see no reason why we cannot "carry on" as a unified body.

Many problems confront organized medicine today, of all of which we are aware. One thing that stood out in the reports today was the word "contact." I have served on the Legislative Committee for several years, and in contacting the legislators, one feels it is quite a unique opportunity and a privilege—at least, one is given that impression. It means a great deal for the medical profession to stand as one body and become acquainted with the legislators.

In the Speaker's address this morning he spoke of the need for this contact. The Chairman of the Council made the same statement, and Dr. Bradley's report of course dealt with that very subject. We in Wayne are trying to carry out this idea of the State Society in contacting our legislators and trying to educate them. It has been my experience that some of them do respond. They probably will respond to the medical point of view, if we can get them interested in our problems before the election.

It behooves all of us to go back home and make every attempt to bring the legislators and those who have to deal with our problems out to the front, so that they may understand our problems, for, after all, we are interested in the welfare of the public. Our motive isn't selfish. It may appear so to many, but we are for organized, honest, upright good medicine.

The postgraduate opportunities that are going to be given out in the state are very attractive. I think, in order that we may keep abreast of the times and show the public that we are interested in the best medicine, that all who can, and all in the state, should avail themselves of the opportunity to attend these postgraduate courses.

I appreciate the responsibility that is placed upon me, and I will try to carry out my part of the program to the best of my ability. I hope I will have the coöperation of the Society, which has been given to the distinguished gentlemen who have preceded me.

Again I wish to thank you. (Applause.)

The Vice Speaker: Dr. Penberthy and I were classmates, so I take this opportunity to wish him well.

The next order of business is that of the election of Councilor for the 14th District, the retiring Councilor being Dr. Howard Cummings.

Dr. John Wessinger (Washtenaw): I arise to place in nomination Dr. Howard H. Cummings to succeed himself as Councilor of the 14th District.

The Vice Speaker: Dr. Howard Cummings to succeed himself. Are there any other nominations?

Dr. H. J. Pyle (Kent): I move that nominations be closed.

Dr. James O'Meara (Jackson): I support the motion.

The Vice Speaker: You have heard the motion. Is there any discussion? If not, all those in favor say "aye"; contrary, "no." Carried.

Will someone make a motion, therefore, that the Secretary cast the ballot in favor of Dr. Howard Cummings?

Dr. R. H. Denham (Kent): I so move.

Dr. Dean Myers (Washtenaw): I support the motion.

The Vice Speaker: Motion has been made and supported that the Secretary cast the ballot for the election of Dr. Howard Cummings as Councilor for the 14th District. Is there any discussion? If not, all those in favor say "aye"; contrary, "no." So carried.

The Secretary: Mr. Speaker, your Secretary does cast the ballot of this House for Howard H. Cummings as Councilor to succeed himself for a term of five years.

The Vice Speaker: The Chair therefore declares Dr. Howard Cummings elected as Councilor of the 14th District.

The next order of business is the election of Speaker of the House of Delegates.

Dr. H. J. Pyle (Kent): Never in all my experience in the State Medical Society have I seen so much beauty and so much power vested in the rear of a pair of glasses. I can't help but believe that the incumbent, the man who has served so well, if he serves two or three years will make a very good Speaker.

I would like to place in nomination the name of Henry Ashley Luce to succeed himself. (Applause.)

The Vice Speaker: Dr. Luce has been nominated. Are there any other nominations?

Dr. Phillip Riley (Jackson): I move that nominations be closed.

Dr. F. T. Andrews (Kalamazoo): I support the motion.

The Vice Speaker: Moved and supported that nominations, with the name of Dr. Henry Luce, be closed.

Dr. Andrews: I move that the Secretary cast the ballot for the election of Henry Luce.

The Vice Speaker: If there is no discussion on the previous motion, all those in favor say "aye"; opposed, "no." So carried.

The motion now before the House is that the Secretary be instructed to cast the ballot in the name of Dr. Luce. Was that supported?

Dr. L. J. Hirschman (Wayne): I support the motion.

The Vice Speaker: Is there any discussion? If not, all those in favor say "aye"; contrary, "no." It is carried. The Secretary will so cast.

The Secretary: Mr. Speaker, your Secretary casts the ballot of this House for Henry Ashley Luce as Speaker to succeed himself.

The Vice Speaker: The Chair declares Dr. Henry Luce elected Speaker of the House of Delegates.

The Speaker resumed the chair.

Dr. C. S. Gorsline (Calhoun): Is it a misprint that there were two Councilors to be elected this year?

The Speaker: It is. That was decided by the report given by the chairman of the Council, an arrangement so as to alternate the periods of election.

The next order of business is the election of Vice

Speaker. The Chair will now entertain nominations for Vice Speaker.

Dr. W. C. Ellet (Berrien): I move that Dr. Reeder be nominated to succeed himself as Vice Speaker.

Several supported the motion.

Dr. Karl Brucker (Ingham): I move that nominations be closed.

Dr. A. V. Wenger (Kent): I second the motion.

The Speaker: Moved that the nominations be closed, and supported. Those in favor say "aye"; those opposed say "no." It is carried.

Dr. L. J. Hirschman (Wayne): In spite of that opposition from Jackson, I move that the Secretary cast the ballot of this House for Dr. Reeder for Vice Speaker.

Dr. James O'Meara (Jackson): I support the motion.

The Speaker: Moved that the Secretary cast the ballot of this House for Dr. Reeder as Vice Speaker for the House of Delegates. Those in favor say "aye"; contrary the same sign. Carried unanimously.

The Secretary: Mr. Speaker, your Secretary casts the ballot of this House for Dr. Reeder as Vice Speaker to succeed himself.

The Speaker: Dr. Reeder, take a bow. (Applause.)

Dr. H. J. Pyle (Kent): Point of order. It is your duty to declare this Vice Speaker elected, which you haven't done.

The Speaker: I now declare Dr. Frank Reeder elected Vice Speaker of the House of Delegates for the year 1934-35 of the Michigan State Medical Society of the United States of America. (Laughter.)

Unfinished business. Has the chairman of the Council any unfinished business to bring before the House of Delegates?

Dr. B. R. Corbus: There are just one or two things I think I might comment upon. The first is that it would be the desire of the Council to have you establish a maximum amount which the Council could expend for the use of the Economics Committee under the resolution that was passed earlier in the evening.

The other is in reference to the Secretary of the State Society. The Council last night directed the President of the Society, the Speaker of the House of Delegates, the chairman of the Committee on County Activities, and a fourth man to be chosen by these three from the Council but from members who are not on the Executive Committee, to act as a scouting committee to investigate the qualifications of any proposed candidate for Secretary.

In the interval before the election of a new Secretary, the Council has directed your chairman to take over the duties. I am not unfamiliar with the workings of this Society. I have been chairman of the Council now for six years. On the Council for more than a decade. The office of the chairman of the Council and the Secretary's office have been very close. Daily communication between us has occurred. All problems affecting policy requiring immediate action have been acted on in these later years after we both have considered and discussed them.

I hope you will bear with me in the difficulties I shall probably have because, although I am familiar with the general workings of the Society to a considerable degree, there is much detail in that office which is extremely new to me. Indeed, it was not until these last few weeks when I have gone into the office and sat by the secretary's side that I have quite realized the multitude of details there are to running the office.

It might interest you to know that I asked Dr. Warnshuis how many pieces of first-class mail went over his desk, and I got the report the other day that out of the office went 8,958 pieces of first-class mail, and into the office came 6,000.

I know you will be kind in overlooking the deficiencies which you may find in my work in these next few months. I assure you I will give you the best I can. I hope you will feel free to call upon me, as free as you have felt in calling upon the retiring Secretary. (Applause.)

The Speaker: Under unfinished business is that particular feature which has been referred to by the chairman of the Council relative to a change in the By-laws providing for the election of another alternate.

Dr. L. J. Hirschman (Wayne): Mr. Speaker, I would move the passage of the amendment offered by me at a previous session, reading substantially as follows. It is an amendment to the By-laws, Section 4 of Chapter 4 under Duties of Officers. Insert after the word "Secretary" the following: "not necessarily a physician or member of the Society," so that it will read, "The Secretary, not necessarily a physician or member of the Society, shall be the custodian of all the records of the Society, he shall conduct all the official correspondence," and so forth. The amendment is the addition of these words, "not necessarily a physician or member of the Society."

That will open the way for this scouting committee of the Council to select a man who will be competent to handle the work of the Society whether he is a physician or whether he is not a physician.

I move you, sir, the adoption of this portion of the amendment.

Dr. F. T. Andrews (Kalamazoo): I support the motion.

The Speaker: Is there any discussion? Those in favor say "aye"; contrary, "no." I wish you would all vote. Again the Chair will ask for the "aye" vote; contrary, "no." The Chair is in doubt.

Those voting "aye" in favor of the proposed change stand and remain standing until the count is made. (Forty-five.)

Those opposed stand. (Fourteen.)

By vote of forty-five to fourteen you have carried the amendment.

Dr. L. J. Hirschman (Wayne): Further down in Section 4, in order to clarify this, the following words should be deleted: "And shall be an ex-officio member of these bodies." I will read it a it is now.

"He shall be the Recording Officer of the House of Delegates, the Council, Scientific Assembly and General Meeting and shall be an ex-officio member of these bodies."

The deletion of the words: "And shall be an ex-officio member of these bodies" is necessary if it should not be a member of the Society.

I move the amendment to delete those words.

Supported by several.

The Speaker: Is there any discussion?

Dr. Roy H. Holmes (Muskegon): Doesn't that obligate the Society, if we should decide to have physician as Secretary, that he will not be an ex-officio member? It seems to me it becomes rather imperative that he not be an ex-officio member he is not a physician. It puts us on the spot force us to have a layman as Secretary.

Dr. Hirschman: Not at all. It simply guards against putting a non-member in as ex-officio member. On the other hand, he can be designated ex-officio member by amendment at that time. keeps you from getting into a hole this way. Otherwise, you might get into a hole.

Dr. Roy H. Holmes (Muskegon): If the Council selected a Secretary in January, you would have to wait until the next meeting of the House of Delegates before you could change that again make him ex-officio member.

Dr. L. J. Hirschman (Wayne): That is quite true. He could act as they do in other state societies.

ties where they have men who are not members.

The Speaker: Is there any further discussion? Those in favor say "aye"; opposed, "no." Carried.

Dr. Hirschman: One other amendment to clarify a situation which has arisen. According to the present By-laws, the Secretary shall act as one of the delegates. If the situation should arise where a non-member becomes Secretary, we would be in the anomalous position of naming a man ineligible to the office of delegate to the A. M. A.

Therefore, I move the deletion of sentence No. 4 under Duties of the Secretary, which reads as follows: "He shall act as one of the delegates of the Society to the American Medical Association." I move the deletion of this sentence and the renumbering of the other duties so that they will number consecutively from No. 4 on instead of from No. 5 on as at present.

Dr. W. R. Clinton (Wayne): I support the motion.

The Speaker: Is there any discussion? Those in favor say "aye"; contrary, "no." It is carried.

Dr. L. J. Hirschman (Wayne): Mr. Speaker, I wish to remind you that that creates another vacancy in the office of delegate to the American Medical Association, which should be filled under the head of unfinished business.

Dr. A. E. Catherwood (Wayne): I should like to nominate for this delegate to take the place of the Secretary, Claude R. Keyport of Grayling.

Dr. L. O. Geib (Wayne): I move that nominations be closed.

Dr. H. F. Dibble (Wayne): I support the motion.

Dr. J. M. Robb (Wayne): I appreciate Dr. Keyport's ability, and he is a very close friend of mine. But we have a senior alternate who also has served in the capacity of President of the organization. He has served rather continuously on the legislative procedure. He has been an outstanding man in his own county, and one whom I would like to see go down as a delegate to the A. M. A., and that is Dr. Carl Moll of Flint.

The Speaker: Dr. Carl Moll of Flint is nominated as the delegate.

Dr. H. W. Plaggemeyer (Wayne): I second the nomination.

The Speaker: Are there any other nominations?

Dr. F. J. O'Donnell (Alpena): Isn't Dr. Moll already an alternate on an unfinished term?

The Speaker: He is.

Dr. O'Donnell: It doesn't seem to me he could be elected to finish another unfinished term as delegate unless he resigned from being the alternate.

Dr. H. F. Dibble (Wayne): In your book, if that is authority, it says Carl F. Moll's term expires in 1935. He has a few months until 1935.

Dr. L. O. Geib (Wayne): I believe this is out of order. I made a motion that nominations be closed, which was duly seconded. I think that motion has to be disposed of.

The Speaker: The motion was not put, Dr. Geib.

Dr. Carl Moll (Genesee): Inasmuch as there is some misunderstanding in the matter, I will ask that my name be withdrawn.

The Speaker: Are there any further nominations?

Dr. H. J. Pyle (Kent): I move that nominations be closed.

Dr. Karl Brucker (Ingham): I second the motion.

The Speaker: It is moved and supported that nominations be closed. Is there any discussion? All in favor say "aye"; opposed, "no." Carried.

Dr. L. O. Geib (Wayne): I move that the Secretary be instructed to cast the ballot for Dr. Keyport as delegate.

Dr. James O'Meara (Jackson): I support the motion.

The Speaker: Moved and supported that the Sec-

retary cast the ballot for Dr. Keyport. Those in favor say "aye"; opposed, "no." It is carried.

The Secretary: Mr. Speaker, your Secretary casts the ballot of this House for Dr. Keyport as delegate to the American Medical Association for a term of two years. (Applause.)

The Speaker: I declare Dr. Keyport elected as delegate.

Dr. J. M. Robb (Wayne): Since we have four delegates, isn't it necessary to have four alternates. Are you going to elect another alternate?

The Speaker: The Chair will entertain nominations for the fourth alternate. Will the Secretary give us a report?

The Secretary: Three alternates' terms expire this year, De Gurse, Denham and Ellet. The two that continue are Moll and Chester. You have elected three, so you have your five.

The Speaker: The chairman of the Council made a request relative to—will you state that, Dr. Corbus?

Dr. B. R. Corbus: Part of the resolution that was passed in regard to the Economics Committee. You will remember there was a portion of it which had to do with the finances, on which the House of Delegates voted that no moneys were to be spent for the use of the Committee on Economics except as they were designated by the House of Delegates. They also voted to continue the Committee on Economics.

What we are desirous of knowing is the amount of money which the House of Delegates desires to designate for the use of the Committee on Economics—I would say the maximum amount of money that the Council may expend for the use of the Committee on Economics for the coming year.

The Speaker: The chairman of the Council desires to be instructed by the House of Delegates.

Dr. W. C. Ellet (Berrien): I would like to ask the chairman of the Council what is the usual sum appropriated for the ordinary standing committees.

Dr. B. R. Corbus: That would be impossible to state because the committees vary to such a degree. Last year this House designated \$500 as the maximum which the Council should use for purposes of the Committee on Economics. I doubt very much if that amount will be necessary this year, but since we don't know what might come up the Council would like very much to have you designate that amount, and give us the authority to use so much of it as necessary.

Dr. F. T. Andrews (Kalamazoo): I move that the Council be instructed that they are to have \$500 to use at their discretion for the ensuing year for the purpose of maintaining the Economics Committee.

Dr. John Wessinger (Washtenaw): I support the motion.

The Speaker: Is there any discussion?

Dr. Roy H. Holmes (Muskegon): Can we have that read, the report of the Committee on Reports of Committees?

Dr. L. F. Foster (Bay): The gist of that was that the committee discouraged the expenditure of any funds other than the regular funds of the Michigan State Medical Society, and then only if and when they were made available by this House of Delegates.

The Speaker: Is there any further discussion? If not, those in favor say "aye"; opposed, "no." It is carried.

Is there any other unfinished business by any member of the House?

Dr. C. S. Gorsline (Calhoun): I want to call the attention of the House of Delegates, officers, and so forth, to the adjourned meeting taking place immediately after the adjournment of this meeting at the Tavern, which will be presided over by the

chairman of our committee, Dr. Clifford Brainard. Please be very prompt.

The Speaker: Mr. Secretary, is there any unfinished business on your desk after twenty-two years of service?

The Secretary: Nothing.

Dr. A. P. Biddle (Wayne): Before we adjourn, I move that the House of Delegates extend appreciation to the Speaker and to the Vice Speaker for the efficient manner in which they have handled this session—and the Secretary.

Dr. H. J. Pyle (Kent): I support that motion.

Dr. L. J. Hirschman (Wayne): May I inject myself in this long enough to relieve you, inasmuch as the Speaker and Vice Speaker are included in this. Dr. Biddle is so modest, but I have no modesty.

All those in favor say "aye"; contrary—if so, why?

The Speaker: Is there any other unfinished business? If not, the Speaker declares this House of Delegates adjourned without date.

The meeting adjourned at nine-thirty o'clock.

GENERAL MEETING

Wednesday Morning, September 12, 1934

The General Meeting of the 114th Annual Meeting of the Michigan State Medical Society, held in the W. K. Kellogg Auditorium, Battle Creek, Michigan, September 12, 1934, was called to order by President Le Fevre at eleven-thirty o'clock.

President Le Fevre: Ladies and Gentlemen: We are about to open the 114th Session of the Michigan State Medical Society. We will have the invocation by Dr. Miller.

Reverend Carlton Brooks Miller: Let us bow our heads and unite in the spirit of prayer.

In the spirit of the Great Physician, O God, we have gathered here for this meeting this morning, and we invoke Thy blessing upon those who are here, that mind and heart may be opened to the spirit of truth and progress.

Make us grateful, O God, for the opportunities that are before us to serve mankind, and give us the energy and the ability and the skill to do that work which is before us.

Guide us in all the deliberations of the day, and may all that is said and done here prove beneficial and helpful in the days of work that are ahead, so as we go away again to our several places in our hearts we shall be glad and we shall feel that we are better equipped to do that which Thou wouldst have us do.

May love, friendship, truth and progress be with us all this day. This we ask in Christ's name. Amen.

President Le Fevre: Dr. A. E. McGregor will give the address of welcome.

Dr. A. E. McGregor read his address of welcome.

ADDRESS OF WELCOME

A. E. MCGREGOR

The Calhoun County Medical Society wishes to voice through the office of its President a hearty and cordial welcome to the members of the State Society who have come to Battle Creek for our 1934 meeting. We offer you a friendly hospitality along with the facilities which we possess, hopeful that the hours spent together will be happily remembered. We are here to take up common problems which concern us, to learn whatever we can that will prove helpful, and to enlarge upon the friendships which grow out of these get-togethers.

It seems that we are living in a time when everyone and everything is being scrutinized and challenged. The medical profession has not escaped. But the proceedings of this meeting will show that all the discoveries which follow years of experience,

all the truth that comes from careful research, as well as our energies and abilities, is made available for the purpose of easing the aches and pains of humanity.

The Doctor has chosen a profession which serves humankind in a most practical way. Irrespective of money, color of skin or character, we obey the call to heal and repair the house of flesh and blood in order that life and usefulness may be prolonged.

We who compose the present generation of Æsculapians should be mindful of the long line of men who have gone before us, their loyalty and faithfulness to Truth and Progress. It is my sincere wish that when our sessions have adjourned you will return to your respective practices feeling that you have had a good time and that the Battle Creek meeting ranks among the best and the most helpful that you have ever attended.

President Le Fevre: The Secretary, Dr. Corbus, will make a general announcement.

The Secretary: At this time it is the custom to announce to this body the action of the House of Delegates. We ended our third session last night, and the thing which perhaps will be of most interest to the profession at large is the action of the House of Delegates in regard to the report of the Economics Committee.

The Committee on Economics has just issued a considerable sized volume on "Postgraduate Education and the Needs of the General Practitioner," which it regards as the most comprehensive study of this aspect of medicine that has ever been made.

I call it to your attention. As you read it I am sure that you will agree with the committee's appraisal. In the near future comments will be made upon it in THE JOURNAL.

The Committee on Economics in its final report ended by saying:

"It is the element of social responsibility that distinguishes the profession from a business or trade. In our social and economic structure, the profession stands out like a vein of gold running through quartz surrounded by the theories and practices of business. The wonder is not that the profession has been affected here and there by these influences. The wonder is that we may still point to and take pride in the acceptance of the responsibility which places the good of society in the forefront. The garment of leadership is not an easy one to wear. Its size is large, and when it falls upon narrow shoulders its folds tend to hamper and suffocate the wearer.

"The committee believes when the history of medical economics is written, Michigan will have been shown to justify her tradition."

The action of the House of Delegates was to this effect after long consideration:

"That the House of Delegates postpone action on health insurance, continue the Committee on Medical Economics, and hold itself ready for a special call if and when national or state programs of health insurance appear imminent."

ELECTIONS

In the elections of last night, Dr. Penberthy of Detroit was elected President-elect.

The delegates to the American Medical Association elected were Brook of Grand Rapids, Luce of Detroit, Gorsline of Battle Creek, and Keyport of Grayling. The alternates were De Gurse of Marine City, Andrews of Kalamazoo, and Denham of Grand Rapids.

Dr. Cummings of Ann Arbor was re-elected Councilor for his district.

The Speaker, Henry A. Luce of Detroit, was re-elected, and Vice Speaker, F. A. Reeder of Flint.

The place of meeting for next year has been left to the Council.

With this meeting and with the adjournment of the House of Delegates, Dr. F. C. Warnshuis retires as Secretary of this Society after twenty-two years of service to take the position of secretary-treasurer, and director of public relations of the California State Medical Society. From the House of Delegates and from the Council came, during the meet-

ing, an expression of our appreciation of him and the wish that he may be most successful in his new work.

By direction of the Council, during the interval between now and the selection of a new Secretary, the chairman of the Council has been directed to take over the office of Secretary as Acting Secretary.

INTRODUCTION OF PRESIDENT LE FEVRE

A while ago I was privileged to attend a dinner which was given to a man whom I am proud to be able to call friend. I learned much about him at that dinner that I did not know before. I knew him largely through our joint work on the Council of the State Medical Society. I knew or came to know the ideals he held for medicine. I came to appreciate his judgment. I came, as I knew him, to understand why he was willing to give, out of a busy practice, so much time to organized medicine and to his fellow practitioners through his years on the state board of registration and his many years on the Council. He has ever had a great desire to raise the level of medicine in this state and to be of help to his fellows.

But at this dinner I learned things that I did not know before. I learned that he had been born on an island in Lake Champlain, Grand Island, close to the Canadian shore, of French-Canadian stock, that he had come to the place where he has lived all his life at a very early age, that he had gone from this place to study medicine and had come back in early lumbering days to practice his profession, and that he had not been content just to practice his profession. I learned from the banker who talked that this banker had a great appreciation of this man's business ability, that he was a banker as well as a doctor. And I learned from the head of the Chamber of Commerce that to him more than any other man this community was indebted for activities which led to the establishment of large industrial plants. And I learned from his patients and his friends how they loved him.

He is a fortunate man who can look back to such a life, fortunate that he can hear these expressions of love and affection and appreciation, and know that he has been able to accomplish so much outside of the routine practice of medicine.

That man is our President. I feel strongly that the Michigan State Medical Society has honored itself by having this year such a president. I take pleasure in introducing to you Dr. George Le Fevre, President of the Michigan State Medical Society.

President Le Fevre then read his President's address.[†]

President Le Fevre: I have the greatest pleasure at the present time in introducing to you a man who is known by practically all the members of the medical profession. He is President of the American Medical Association and lives in Des Moines, Iowa, a very successful man in the profession.

I take great pleasure in introducing to you Dr. W. L. Bierring, President of the American Medical Association.

The audience arose and applauded.

PRESIDENT BIERRING'S ADDRESS

Dr. Walter L. Bierring (President of the American Medical Association): Mr. President, Members of the Michigan State Medical Society, Ladies and Gentlemen: In expressing my pleasure and privilege at attending for the first time a session of the Michigan State Medical Society and presenting the cordial greetings of the American Medical Association, I am conscious that all the ideals and purposes of organized medicine have been reflected so well here in the activities of this State Society.

You have ever kept medical practice and medical education on a very high plane. Fortunate as you are in the traditions of 114 years of organization, greater than any other state here in the Middle West, you have traditions back of you which indicate the great place you have taken in American medicine.

One's thoughts must dwell upon that first great scientific experiment which had its beginning here on the northern shores of Michigan in the development of the pioneer physiologist of America, Dr. William Beaumont. Dr. Osler tells the story so well, and shifts the scene to that beautiful June morning in 1822 when there were gathered a gay company there on the shores of Lake Michigan in Mackinac, near where Fort Mackinac stood, the scene of many a conflict between the rose and the lily in the conquest for the western world. Here on this gay morning they were gathered to watch the return of the bateaux from the winter's hunt. A shot was heard in the village store. A young army lieutenant and Beaumont hurried to this store to find a French-Canadian who had been accidentally wounded by a gunshot wound causing an opening in the thorax and the abdomen which after a long process of healing developed an opening or fistula into the stomach, and the man and the opportunity had met.

The observations that were made there upon the function of the gastric juice and its influence on digestion were made the basis of all our knowledge upon this subject, confirmed so well by that great Russian physiologist, Pavlov, fully seventy-five years later. It is true that some of his work was done later on the fringe of civilization at Fort Crawford where Prairie du Chien now stands, but his real inspiration came here.

One's thoughts go to the many pioneers who have influenced so much the progress of medicine here in this state. One thinks of the influence of your two great universities, placing medical education upon a university basis. One thinks of this great educator, Dr. Victor C. Vaughan, and again of that great promoter of the higher standards of medical licensure, Dr. Beverly D. Harrison, who, during many years, helped to raise the standards of medical practice in this state.

In your more recent development of the continuing education of the doctor, you are only fulfilling what is the real purpose of medical education. It is not a study of but a few years within the walls of a medical college, but it is one continuous process of study through all the period of one's life, and by thus carrying to the individual practitioner the latest advances in medicine you have helped to keep the standard of your doctors on a very high plane.

It recalls a trite saying now that the evolution of medical education in America has been the marvel of the educational world, but one little realizes the progress that has been made unless he goes back to thirty years ago and recognizes the conditions as they existed then. One hundred sixty-two medical schools, many of them commercial in character, had very low entrance requirements. Only one in the entire list required a degree in the arts or sciences for admission to medicine. It will always be to the credit of the American Medical Association and to the medical profession of America that they had the courage to put their own house in order, and determined, by inspection and by investigation, to bring about a higher state of medical learning.

In the course of but fourteen years, to 1920, those 162 schools were reduced to 73. There are now 77 approved medical schools in this country, all on a university basis. All have a common requirement for admission. All have a uniform course of study. All are distinctly on a par with the highest medical institutions anywhere.

[†]President George R. Le Fevre's address was printed in full in the October number of THE JOURNAL, M.S.M.S.

The American Medical Association thus, through its Council on Medical Education and Hospitals, has developed medical education in this country so that it is the equal of any. At the same time it has endeavored through its JOURNAL to transmit to its membership of 100,000 every week the latest advancements in the art and science of medicine throughout the world. Through the editing of nine special journals it has kept pace with all the advances in the different forms of specialized practice, and through the publication of *Hygeia* which, as you know, is the child of the Woman's Auxiliary, it has endeavored to bring to the public the real facts regarding the benefits of modern medicine. Thus it has helped to carry on that great plan of public education, to bring to the people, to the intelligent citizenship of this country, the real meaning of modern medicine and its achievements.

By these various means, through the radio, through various forms of speakers' bureaus, through lectures, and through publications we have developed a new type of clientele, more discerning and demanding much more in the grade of medical service than a generation ago, so that the type of doctor of tomorrow will have to be one with a broader training of cultural, scientific background, well trained in the clinical arts and particularly in the handling of human people. Perhaps much of his function in the future will be related to so-called preventive medicine, and he will be as much concerned with the maintenance of health as in the care of those who are sick.

The American Medical Association, through its Council on Education, has also done a great work in elevating the standards of specialized practice. It has recognized, as you have here in Michigan for a long time, that the day of the over-night self-styled specialist has passed. Now, through the influence of special examining boards that are formed from the leaders in the particular specialties, an individual is qualified by a long course of training and by a final qualification test, and is then recognized by his peers as a specialist in that particular subject. When registered then in the Directory of the American Medical Association, it comes to the public and to the profession who are the real specialists.

Thus in the medicine of the future there will probably be these two types of physicians: The common, the general practitioner, the family doctor; and the highly qualified specialist.

There are, of course, many changes going on in medicine, as you have often been told in that fine address of your President of the manner in which the Michigan State Society has endeavored to meet this challenge of a new order.

On the other hand, though, it should be remembered that society has ever governed the type of practice of its particular period, and at all times medicine has been able to adjust itself and to adapt itself to requirements of its particular period. While more complicated now with the many advances in scientific medicine, nevertheless we are fully confident that again medicine will be able to adapt itself to the new demands of a new society. Recognizing fully that in this advance in technology, in the great development of industrial medicine and industrialized service there are many more avenues of service, again we say we will be able to meet these as they come.

There has been much said about the knowledge of medicine, that it is not a matter of recent creation but is rather the accumulation of traditions through all the ages, the word from the teacher and the disciple, whether the written or the spoken word, which has come to us through a sequence of events. We can take any particular subject we have today, but possibly it can best be illustrated by the control of diabetes. It took 100 years from the days in

Leber's laboratory to the study of fats and sugars, to the development of special tests for the recognition of the type of sugar that is present in diabetes.

Again, the discovery of the different functions of the pancreas. As far back as 1888 it was determined by Fenarby and Wiechowski that there was something lacking in the pancreas, as shown by dogs that had been depancreatized, that produced the symptoms of diabetes. At the beginning of the century, it was found this was a particular ferment. The physiologist Schaeffer named it insulin. Many attempts were made to separate this extract, but it was left to Banting and Best on the north of us to demonstrate this extract and its use in dogs in which the pancreas had been removed. A year later its use in the human being was reported by McLeod. Finally, the cure or the control of this disease was found, taking many studies in different branches, on the other hand illustrating that ideas may lie dormant in the minds of men and yet, when they finally come to fruition, it is difficult to determine who is their progenitor.

On the other hand, there is an illustration in the old Greek relay race, where one runner passed the torch on to the next, and when the final race was run equal credit must be given to those who kept the torch burning and made the lamp burn a little brighter.

So there is an opportunity in these graduates of today, in those who will form the future membership of our state societies and our American Medical Association. To them we look for the contributions that are to come, to carry, as this State Society will, the lamp of science so that it will burn a little brighter in the progress of medicine for today, tomorrow, and the years to come.

Thank you. (Applause.)

President Le Fevre: I want to thank you, Doctor Bierring. It was a very nice talk.

Ladies and gentlemen, I now induct into office the member whom you have chosen to succeed me. He requires no citation as to his personal character or his standing as a distinguished member of the medical world—regent of the University of Michigan, a surgeon of note, a safe, sound leader.

I present to you your new President, and relinquish to him the office of President of the Michigan State Medical Society, symbolized by this badge. Ladies and gentlemen, I present President Richard R. Smith of Grand Rapids.

The audience arose and applauded.

President Smith read his prepared paper.*

President Smith: I now want to introduce to you our new President-elect, Dr. Grover Cleveland Penberthy of Detroit.

President-elect Penberthy: Mr. President, Dr. Bierring, Officers, Ladies and Gentlemen: The honor conferred upon me is appreciated, and I understand from what Dr. Smith has said that the program of the future means a good deal of responsibility for the incoming officers.

I know it is going to be a pleasure for me to assume this responsibility as best I can and to meet it. The confidence the Society has entrusted in me is appreciated, and again I wish to thank the membership of the Society and assure you that I will try to carry on and do my part in the future (Applause.)

President Smith: This concludes the morning program. I wish you all a most successful year. You may be sure I shall do everything I can to make it so.

Thank you.

The meeting adjourned at twelve forty-five o'clock.

*The address of President-elect Smith appeared in full in the October number of THE JOURNAL, M. S. M. S.

DEPARTMENT OF SOCIETY ACTIVITY

ARTICLE 2—PURPOSE

Section 1. The purposes of this Society are to promote the science and art of medicine, the protection of public health and the betterment of the Medical Profession; and to unite with similar organizations in other States and Territories of the United States to form the American Medical Association.

ATTENTION OF MEMBERS

This issue of the JOURNAL is the most important and most informative issue of the year. It contains the minutes of our Annual Meeting. Please read it carefully. The suggestion is made that at your next County Society meeting you call upon your delegates to review the Committee Reports and the actions of the House of Delegates as recorded herein.

ANNUAL MEETING OF THE COUNCIL

Monday Evening, September 10, 1934

The Council of the Michigan State Medical Society convened in its 114th Annual Session in the W. K. Kellogg Hotel in Battle Creek, Michigan, at 7:30 p. m., September 10, 1934, Chairman B. R. Corbus of Grand Rapids presiding, with the following members of the Council present:

A. S. Brunk, Detroit; Julius Powers, Saginaw; Harlan MacMullen, Manistee; C. E. Boys, Kalamazoo; W. A. Manthei, Lake Linden; B. H. Van Leuven, Petoskey; Thomas P. Treynor, Big Rapids; Paul R. Urnston, Bay City; George C. Hafford, Albion; Henry E. Perry, Newberry; T. F. Heavenrich, Port Huron; Henry R. Carstens, Detroit; J. E. McIntyre, Lansing; F. A. Baker, Pontiac; Henry A. Luce, Speaker of the House of Delegates, Detroit; F. C. Warnshuis, Grand Rapids; President Le Fevre, Muskegon; Richard R. Smith, President-Elect, Grand Rapids; Wm. A. Hyland, Treasurer, Grand Rapids; J. H. Dempster, Editor of the Journal, Detroit; J. R. Bruce, Bruce Publishing Co., St. Paul.

Chairman Corbus introduced Mr. J. R. Bruce, who briefly addressed the Council concerning the publication of the JOURNAL.

On motion of Dr. Hafford, seconded by Dr. Brunk, the minutes of the Executive Committee were approved as printed.

Chairman Corbus presented the annual report of the Council, the subjects of which were considered seriatim and either adopted, rejected or corrected, following which Dr. Luce moved, seconded by Dr. McIntyre, and carried that the report of the Council as amended be approved as a whole.

Secretary Warnshuis presented the Membership and Financial report, and reported on unpaid notes receivable. It was moved by Dr. Luce, seconded by Dr. Boys, and carried that the matter of unpaid notes be made the business of the Councilors of the respective Districts in which the makers of the notes reside.

The Auditor's report and Secretary's resignation was presented by Dr. Warnshuis. It was moved by Dr. Carstens, regularly seconded, and carried that in compliance with the action of the Executive Committee the Acting Secretary be authorized to accept the auditor's statement and give the Retiring Secretary a release for the funds.

Dr. Baker made a preliminary report for the special committee appointed at the August 1 Executive Committee meeting to draw up a resolution of regret on the resignation of Secretary Warnshuis.

The matter of the request of the University of Michigan's Department of Graduate Medicine for \$1,500 was reported on by Dr. Warnshuis, and discussed by the Council. On motion of Dr. Hafford, it was regularly supported and carried that this matter be referred to the next meeting of the Council.

Chairman Corbus addressed the Council, and suggested that a scouting committee be appointed for the purpose of securing a Secretary for the Michigan State Medical Society. It was moved by Dr. Carstens that such a committee be appointed to consist of the Chairman of the Committee on County Societies, the Speaker of the House of Delegates, the President of the Society, and one other member of the Council not a member of the Executive Committee to be selected by those three; seconded by Dr. Hafford, and carried.

On motion of Dr. Luce, supported by Dr. McIntyre, the Council recessed until 12:15 o'clock Wednesday, unless sooner convened.

DON'T NEGLECT TO VOTE

Second Session of the Council

The Council convened at 12:30 in the W. K. Kellogg Hotel on September 12, 1934.

Present: Corbus, Heavenrich, Brunk, MacMullen, Van Leuven, Boys, Manthel, Carstens, Hafford, Perry, Powers, Cummings, Urmston, McIntyre, Treynor, President Smith, President-Elect Penberthy, Retiring Secretary F. C. Warnshuis.

FUNDS FOR POST GRADUATE EXPENSES

Doctor J. D. Bruce presented a request for financial aid in creating Post Graduate Courses projected for different centers during the coming winter. He discussed the probable expense, a portion of which he requested the State Society to bear. Upon motion of Doctor T. F. Heavenrich, properly seconded and carried, the Council appropriated \$1,000 for this purpose and as a part of the motion provided that the money so appropriated was to be disbursed as the statements were rendered.

ELECTIONS

Doctor Warnshuis in the chair. The first order of business was the election of Chairman for the ensuing year. Doctor Paul R. Urmston nominated Doctor Julius Powers as Chairman and was supported by Doctor Harlan MacMullen. On Doctor J. E. McIntyre's motion, duly seconded and carried, the Secretary was directed to cast the ballot for Doctor Julius Powers as Chairman of the Council. The Secretary did so and Doctor Powers was declared elected.

Doctor A. S. Brunk nominated Doctor T. F. Heavenrich for the office of Vice-Chairman. The motion was properly seconded and upon proper motion the Secretary was directed to cast the ballot for Doctor Heavenrich. The Secretary did so and Doctor T. F. Heavenrich was declared elected.

Upon motion of Doctor B. H. Van Leuven, properly seconded, Doctor J. E. McIntyre was elected Chairman of the Publication Committee.

Upon motion of Doctor Thomas P. Treynor, properly seconded, Doctor C. E. Boys was elected Chairman of County Societies.

Upon motion of Doctor T. F. Heavenrich, properly seconded, Doctor Henry R. Carstens was elected Chairman of the Finance Committee.

By action of the Society, the Executive Committee for the coming year will be:

Dr. Julius Powers—Chairman
Dr. T. F. Heavenrich—Vice Chairman
Dr. C. E. Boys—County Societies
Dr. Henry Carstens—Finance
Dr. J. E. McIntyre—Publication
Dr. H. A. Luce—Speaker of the House

There being no further business, the Council adjourned.

B. R. CORBUS,
Acting Secretary.

MINUTES OF THE EXECUTIVE COMMITTEE OF THE COUNCIL OF THE MICHIGAN STATE MEDICAL SOCIETY

The Executive Committee of the Council of the Michigan State Medical Society met in Lansing, Michigan, on October 4, 1934, at 7 o'clock. The following members were present: H. A. Luce, J. E. McIntyre, T. F. Heavenrich, C. E. Boys, H. R. Carstens, President Richard R. Smith, and President-Elect G. C. Penberthy.

The Secretary presented a statement of the finances of the Society and reported upon the delinquent members and upon the notes receivable.

The Secretary reported upon the sale of the report of the Economic Survey and Plan and the report on the Post-Graduate Medical Education.

The Secretary presented a communication from the Chairman of the Cancer Committee in regard to a proposed cancer survey by the American Society for the Control of Cancer, the plan having the approval of his committee. On motion by Luce, seconded by McIntyre, the Executive Committee voted to extend an invitation to the American Society for the Control of Cancer to conduct a cancer survey of Michigan along the lines outlined in their communication, subject to the understanding that there is to be no expense to the Society.

President Smith made the following committee appointments which were confirmed.

Legislative Committee.—James B. Bradley, Chairman, Eaton Rapids; L. G. Christian, Lansing; Philip Riley, Jackson; William Hyland, Grand Rapids; L. J. Gariepy, Detroit.

Woman's Auxiliary Advisory Committee.—L. J. Hirschmann, Chairman, Detroit; J. Milton Robb, Detroit; Wm. R. Torgerson, Grand Rapids.

Radio Committee.—Wm. J. Stapleton, Jr., Chairman, Detroit; R. J. Himmelberger, Lansing; Kenneth Lowe, Battle Creek.

Maternal Welfare.—A. M. Campbell, Chairman, Grand Rapids; Harold Mack, Detroit; Harold Hurley, Jackson; Norman Miller, Ann Arbor; Max Burnell, Flint.

Preventive Medicine.—L. O. Geib, Chairman, Detroit; C. T. Ekelund, Pontiac; Roy Holmes, Muskegon; G. M. Byington, Battle Creek; J. J. O'Meara, Jackson; C. R. Keyport, Grayling; L. F. Foster, Bay City; F. B. Miner, Flint; A. L. Callery, Port Huron.

Therapeutics.—Louis Le Fevre, Chairman, Muskegon; Edgar E. Poos, Detroit; Milton Shaw, Lansing.

The Chairman of the Council appointed the following Committees:

Finance Committee.—Henry R. Carstens, Chairman, F. A. Baker, Henry Cook.

County Societies.—C. E. Boys, Chairman, B. H. Van Leuven, Paul R. Urmston.

Publication Committee.—J. B. McIntyre, Chairman, A. S. Brunk, Howard H. Cummings.

The Secretary presented an ethics complaint from Wayne County Society. The matter was referred to the Secretary with instructions to obtain further information.

The Committee discussed and took the first steps towards the institution of a program which would look to the correlation and direction of committee activities.

In the furtherance of this program the Secretary was instructed:

(A) To communicate with the Chairman of the Radio Committee advising him that it is the desire of the President and the Executive Committee that as a part of their program they include several broadcasts on *The Incidence of Sickness as a Liability for Which Provision Should be Made*.

(B) To suggest to the President of the Woman's Auxiliary that the above topic be included in the year's program for discussion and especially before lay audiences.

(C) To communicate with Dr. W. D. Henderson of the Joint Committee on Public Health Education suggesting that this Committee consider the advisability of featuring this subject during the coming year.

(D) To notify the Chairman of the Preventive Medicine Committee that it is the desire of the Executive Committee that this Committee join in this correlative program and to submit to the Chairman certain matters properly coming under this Committee for study and consideration of policy, with the request that on the completion of their study a report be made to the Executive Committee.

President Smith reported progress on the so-called Scouting Committee for Secretary.

On motion by Luce, seconded by McIntyre, one thousand dollars was appropriated for the use of the Legislative Committee, to be paid on proper voucher from the Committee Chairman, this appropriation being within the budget.

President Smith presented a request that the Society appoint a representative on the Advisory Committee for Temperance Education, this being a part of the Women's organization for Non-Partisan Reform.

On motion of McIntyre, seconded by Carstens, the President was authorized to appoint such a representative.

The meeting adjourned at 11:30 p. m.

BURTON R. CORBUS, *Acting Secretary*.

OUR NEW TEACHING CENTERS

Four hundred and twenty-five members of the Michigan State Medical Society were in attendance on the opening days of the autumn courses at Battle Creek-Kalamazoo, Flint and Grand Rapids. I have been fortunate in being able to attend all of these sessions and have been greatly impressed and deeply gratified with the excellence of the presentations as well as the appreciation of the doctors, as evidenced both by their attendance and their interest in the problems under discussion.

Although our plans are maturing satisfactorily, we must continue to emphasize the reasons that have made a program of postgraduate education the most important objective of State Society activities. Many of us still actively engaged in practice recall that in our college course, and in the early days of practice, medicine was practically static. Changing views were being constantly advanced but these were the result of individual experience, which usually took small account of the hereditary, constitutional and

environmental influences that made one individual react quite differently from another. Thus, these views were quite devoid of usefulness for general application.

Through the utilization of many of the collateral sciences, particularly biology, physics and chemistry, a great body of factual data have been assembled in such a workable and fluid state as to permit us to speak with accuracy of medicine as a science. This data can now be taught as factual material, and applied in the daily practice of medicine toward more accurate diagnosis and more logical treatment.

The graduate of forty years ago, and previously, rendered a better quality of service than the graduate of today in relation to the sum total of medical knowledge. Advances were so slow in those days that if the doctor practised the things he had learned in college it was all that could be expected of him.

During the past forty years medical knowledge has greatly widened the doctor's field of usefulness and at the same time has imposed added obligations. To fulfill these obligations in the care of our patients we must utilize the best that science affords, or, at least, such an approximation as our surroundings permit. The doctor should know what constitutes good service, whether or not circumstances favorable to its application be present. This, in brief, is the purpose of providing a continuous program of education.

J. D. B.

THE ELI LILLY COMPANY
GIVES A PARTY

To some four hundred guests from all parts of the United States, with a sprinkling from foreign countries, the Lilly Company of Indianapolis were hosts on October eleventh. The occasion was the dedication of their splendid new research laboratories, commemorating Mr. J. K. Lilly's lifelong interest in research. It was our privilege to be one of these guests and listen to Sir Frederick Banting tell the story of the early work which led to the discovery of insulin; to Sir Henry Dale of England, director of the National Institute for Medical Research and secretary of the Royal Society, in an inspiring talk on the Newer Chemical Ideas in Medicine; to be fascinated by Doctor Irving Langmuir, physicist and Nobel Prize winner, telling of the Unpredictable Results of Research, and to hear Doctor Elliott Joslin, Doctor George Minot, Doctor Carl Voegtlin, and many others. At a later period this Journal will print extracts from some of these remarkable speeches.

To the members of the Indiana State Medical Society in session at their annual meeting, the specially invited guests from out of town, and a number of lay friends, two thousand in all, the Lillys served a delightful luncheon, and in a nearby tent the dedicatory exercises were held.

Mr. J. K. Lilly as toastmaster, on the fiftieth anniversary of his graduation in Pharmacy, greeted at dinner in the evening, his four hundred guests at the Indianapolis Athletic Club. Business man of the highest type, philanthropist, vigorous supporter of those projects which will be helpful to humanity, maintaining, through his company, laboratories for pure research at the Marine Biological Laboratories, Woods Hole, Massachusetts, as well as at Indianapolis, financing special studies in coöperation with research groups in many universities and clinics, maintaining a full time staff of doctors and assistants where, in a ward assigned to them in the Indianapolis City Hospital, practical clinical research may proceed, it is fitting that on the face of the medal presented to him by Doctor Joslin, should be this inscription—"Explorer of the uncharted seas."

WOMAN'S AUXILIARY, MICHIGAN STATE MEDICAL SOCIETY

MRS. F. T. ANDREWS, President, Kalamazoo.
MRS. F. M. DOYLE, Secretary, Kalamazoo.

NOTES FROM THE 1934 STATE AUXILIARY MEETINGS

Battle Creek, Michigan
September 12 and 13, 1934

The 1934 Auxiliary Convention is now a matter of record. Those unable to attend missed the instructive benefits and good fellowship of such gatherings; those present were most royally entertained by the Battle Creek ladies and we hope carried home with them the enthusiasm which was manifested everywhere for the future programs of their local units.

The Auxiliary maintained its headquarters at the Battle Creek Sanitarium.

On Wednesday, September 12, the executive board met for luncheon and business with the County presidents as guests, at the Kellogg Hotel. Ten board members and eight County presidents were present. Reports and recommendations were given and a round table discussion was held with each County president presenting her local problems. Mrs. Elmer L. Whitney, president, presented an outline of program suggestions, a copy of which was given to each County president.

Following the luncheon, the visiting members enjoyed a trip to the Ann J. Kellogg School for underprivileged children. It is a magnificent building, most modernly equipped in every way for caring for children either mentally or physically handicapped.

Later that afternoon a tour through the Kellogg factory was enjoyed and a delightful tea was served in a beautiful improvised garden in the ball room connected with the factory. Each guest was given a lovely rose and a small container filled with Kellogg samples.

The "Bring-Your-Husband Dinner" served at seven o'clock at the Post Tavern, and attended by about 150 persons, was an outstanding social event. A splendid orchestra furnished music for dancing and a very talented vocalist entertained with songs during the dinner. The guests were then ushered into the ball room where between dances they were entertained by a magician and tap dancers.

On Thursday, at 10 a. m., the general business session was called to order by the president. Reports of officers and standing committee chairmen were given. Four Upper Peninsula counties have plans for Auxiliary units to be organized soon. We consider this of special interest because they will be the first Auxiliaries in the Upper Peninsula and we hope that other counties may soon follow.

Reports of County Presidents were given. Some stressed the social side alone, others sponsored health programs of various kinds, some raised money for scholarships, needy nurses funds, etc., but all seemed bent on the one thing—to help the medical groups in getting matters of importance to the laity.

It was voted to make Dr. Caroline Bartlett Crane, of Kalamazoo, the first honorary president of the State Auxiliary in recognition of the excellent work she accomplished in organizing the State group.

The following names, presented by the nominating committee, were unanimously elected:

Mrs. F. T. Andrews, Kalamazoo.....President
Mrs. A. M. Giddings, Battle Creek.....
President-elect
Mrs. J. A. McLandress, Saginaw.....Vice President

Mrs. F. M. Doyle, Kalamazoo, was appointed Secretary-Treasurer.

The president's address followed:

"Work closely with your Advisory Board to avoid mistakes. . . .

"There are two phases of Auxiliary work: first, is that of Self-Education, and second, Public Relations work. Hold institutes. Use the Auxiliary meetings as the place to gain information and Public Relations work as a medium to use this knowledge in service to the public. . . .

"Support the policy of the National Congress of Parents and Teachers to encourage Summer Round-Up examinations in the office of the family physician in preference to organized clinics. . . .

"The amount of social and welfare work depends upon your own particular needs in your own counties.

"Read State Journals and A. M. A. Bulletin for information on all important medical problems."

A vote of thanks was extended the members of Calhoun County Auxiliary and Medical Society for the fine reception, excellent entertainment and educational programs which were tendered to the visiting members.

A beautiful shoulder corsage was presented to Mrs. E. L. Whitney, retiring president, by Mrs. Frank Hartman, president of the Wayne County Auxiliary, as a token of love and esteem from the Wayne County Group.

The meeting then adjourned until 12:30 when a most unusual and attractive luncheon was served in the dining room of the Battle Creek Sanitarium to one hundred and fifty members and friends of the Auxiliary with Mrs. F. M. Giddings, of Battle Creek, acting as toastmistress.

Dr. Walter L. Bierring, president of the A. M. A., was present and spoke briefly on the excellent work the Auxiliary was doing everywhere in the United States.

Dr. Richard Smith, president of the Michigan State Medical Society, praised the work of the Auxiliary and wished the Auxiliary much success in becoming state-wide.

Drs. Hirschmann, Robb and Heavenrich, members of the State Advisory Board to the Auxiliary, were present and gave short talks. Dr. Hirschmann was pleased with the prospective programs for the coming year. Dr. Robb stated:

"We have our backs to the wall and we feel that you are the people who can help us out. Gather information that will instruct the people as to the background of the cultist, etc. Correct the idea that doctors are wealthy because they are clean and prosperous-looking."

Dr. Heavenrich spoke briefly on state medicine and how it was insidiously gaining ground.

Mrs. G. Henry Mundt, of Chicago, the principal after dinner speaker, gave us many helpful suggestions in reference to our contacts and problems with anti-medical people. She stated: "Our motives are just as altruistic as the motives of any organization. . . .

"We can help our husbands help the public by giving them good medical legislation. If we do not do it, the outside organizations will do it to the detriment of the medical profession."

We consider this a most successful meeting. Programs were well arranged and very helpful. The hospitality of the Calhoun County Auxiliary is long to be remembered. We all left with a feeling of regret, but with a hope that we might some day return.

MRS. LLOYD C. HARVIE,
Chairman Press and Publicity.

THE NEED OF A WOMAN'S AUXILIARY

A majority of the medical profession, particularly those who have not been active in the organizational field, have expressed a doubt as to the need of a woman's auxiliary to organized medicine. To those who have carried the burden of office, there comes a realization that there is a necessary and vital place which the wives of doctors can fill.

With the complicated social structure which is a part of our civilization, there must be some link or liaison between the medical profession and society in general. This was not an essential in the preceding generation.

The busy practitioner of medicine can not possibly have the time—without neglecting his patients—to make the necessary contacts with the legislative bodies, with the press, with all the numerous organizations that compose any given community. These groups are interested in the problems of medicine and we are definitely interested in theirs. The medical profession is frequently condemned because of its narrowness of community vision and in the great majority of instances, this is not based in fact. The presentation of our beliefs, of our works, of our hopes have either not been presented at all or have been presented incorrectly.

Each county society needs an auxiliary for this definite community objective—rather than for social purposes.

Once organized, the first and most important duty is to properly educate the members so that they may understand not only the background of medicine but also its present day position and problems. This is but half of their education.

It is also their responsibility to study community needs in other lines of endeavor, so that these needs may be properly interpreted to the medical profession.

Then, and then only, will the wives of doctors be qualified to serve in a public relations capacity that will be of definite value not only to organized medicine but also to the communities in which they live.

* * *

Be interested! be informed! be intelligent! you wives of doctors, so that you may be auxiliary not only to the medical profession but also to the public!

J. M. ROBB, M.D.

Member of the Advisory Committee,
Woman's Auxiliary to the Michigan State
Medical Society, 1933-1934.

WAYNE COUNTY

The Woman's Auxiliary of the Wayne County Medical Society are arranging a "bring your husband" dinner which will be held at the Masonic Temple, Detroit, on the evening of November 9. Dr. G. W. Dwyer (Ph.D), of Vanderbilt University, will deliver the address of the evening. Mr. Malcolm Bingay, editor of the *Detroit Free Press*, will act as chairman; Mr. Edgar Guest, the *Free Press* poet, will propose the toast to the Doctors' Wives, and Ann Campbell, poet of the *Detroit News*, will perform a similar function to the husbands. This is the second annual dinner. The popularity of the first, held a year ago, was attested by a large attendance. An equal, if not greater, attendance is anticipated at the coming event.

MICHIGAN'S DEPARTMENT
OF HEALTH

C. C. SLEMONS, M.D., Dr.P.H., Commissioner
LANSING, MICHIGAN

ALLOCATING BIRTHS AND DEATHS TO RESIDENCE

A very important meeting was held at the Bureau of the Census in Washington the latter part of August at which arrangements were made to allocate all birth and death records to the place of residence.

An advisory committee of state registrars made up of Dr. W. T. Fales of Alabama, Dr. J. V. DePorte of New York, and Mr. L. W. Hutchcroft of Wisconsin, with Dr. W. J. V. Deacon of the Michigan Department of Health as chairman, met with the officers of the Bureau of the Census. The Honorable W. L. Austin, Director of the Census, opened the meeting, and Dr. Stuart A. Rice, Assistant Director, presided.

Under the existing laws of all states, births and deaths must be reported from the district in which they occur. There will be no change in this practice since this is the only possible way for these records to be kept. In the offices of the state registrars and in the Bureau of the Census, both births and deaths will now be allocated to the place of residence.

Cities having extensive hospital facilities have necessarily been charged with many deaths of non-residents, people coming to the hospital for treatment and dying while there. The increased use of hospitals for obstetrical cases has given rise to a similar situation in regard to births, the infant mortality rate being distorted by the unusual number of births. Unless the infant death occurred while the mother was still in the hospital, it was not charged to the community which was credited with the birth.

On the other hand, some cities have profited unduly by the fact that tuberculosis sanatoria and other hospitals are located outside of the city limits. When these deaths are allocated back to the cities, a material change is made in the rate.

It is, of course, immensely important that the vital statistics of a community reflect the actual conditions as nearly as they may be known, and the plan of allocation adopted by the Census upon recommendation of the advisory committee will be a much needed refinement in our statistical material.

It is urged that all physicians who attend births cooperate by being very particular to state carefully the residence of the mother. Where the residence of the father and mother do not agree, the birth will be credited to the residence of the mother.

W. J. V. D.

STREPTOCOCCIC SORE THROAT

On September 13 a call was received from Dr. W. A. Smith, Health Officer of Petersburg, asking for help and notifying us regarding an outbreak of streptococcic sore throat. The following morning a physician was sent from the state department of health to make a preliminary investigation. It soon appeared that the outbreak was milk-borne, but due to the fact that there was only one general supply for the village and all but about twenty families obtained their milk from this source, it took some time to prove this fact. Sufficient evidence was available so that the milk supply was shut off within twenty-four hours after the investigation was started. Subsequent investigation furnished all proof necessary to justify this action.

Up to date 111 cases have come to the attention of

physicians. A survey of all homes in the village is being made to determine how many cases there may have been without medical attention.

Practically all of the cases have been either regular customers of the milk supply involved or had opportunity to consume some of the milk within a few days previous to their attack. Only two or three of the cases so far noted have no histories of using the milk in question.

The cases have been quite severe. Nine deaths have occurred recently in the village, six of which were definitely due to the streptococcus infection which was the cause of the outbreak. Of the other three deaths, a diagnosis of encephalitis, unrelated to the streptococcal infection, appears to have been definitely established in one case. In the second case encephalitis appeared probable, while in the third there is considerable question as to whether the streptococcal infection may have been responsible.

A hemolytic streptococcus having cultural characteristics different from the streptococcus epidemicus was isolated from the throats of six patients, and the same organism was isolated from one-quarter of the udder of one cow out of a herd of twenty animals. This particular one-quarter of the udder of the cow in question showed definite evidence of acute mammitis and the milk from this quarter showed a yellow color, due to pus.

The milk in question was not pasteurized. The citizens of Petersburg are now convinced that pasteurized milk is the only safe milk.

C. D. B.

MALARIA IN MICHIGAN

Malaria cases reported in Michigan for the past year and a half, while not constituting a major health problem, have been sufficiently numerous to justify physicians being on the watch for cases. Michigan has been proved to have malaria-bearing mosquitoes, and a point of interest about some of the recent cases is the fact that they are of Michigan origin and not imported from the south, as we have been accustomed to expect.

The 1933 and 1934 cases have been grouped, as is usually true of malaria. Van Buren County has had a number, and at the present time Lansing has four Michigan-contracted cases.

Judging from the number of cases reported for the first nine months of 1934, this year will see a 50 per cent increase over last year. The total cases recorded in 1933 was sixty-three, and seventy-four have been reported for the first nine months of 1934. There were two deaths in 1933, one in 1932, four in 1931, and five in 1930. Older practitioners will recall when Michigan was one of the malaria states.

LABORATORY

The output of the biologic plant increased 20 per cent during the fiscal year ended June 30, 1934, taking the average of all products.

Dr. Max McKee of the United States Public Health Service Spotted Fever Laboratory at Hamilton, Montana, has been working in the Bureau of Laboratories, getting instruction in media making and testing for sterility and safety of biologic products. Dr. McKee was sent to Michigan by the National Institute of Health.

Two new volunteer technicians have joined the laboratory staff. Edith Heidlebaugh, B.S., from Ohio State University, is at the Western Michigan Division in Grand Rapids, and Mary Esther Evans, B.S., University of Wisconsin, and M.S., Montana State College, is working in the Lansing laboratories.

COUNTY HEALTH OFFICERS ON LEAVE

Dr. Ralph Ten Have, director of the Ottawa County Health Department, and Dr. A. B. Mitchell, director of the Allegan County Health Department, are on leave of absence for the year. Both have been granted Rockefeller Fellowships. Dr. Ten Have is studying at Johns Hopkins, and Dr. Mitchell is at Harvard.

Dr. Morton L. Levin is taking Dr. Ten Have's place in Ottawa County, and Dr. F. S. Leeder is supplying for Dr. Mitchell in Allegan County.

CHILD HYGIENE NOTES

A six weeks' series of Women's Classes was begun in Wayne County on September 10 by Dr. Ida Alexander. When this schedule is completed, Dr. Alexander will conduct a similar series in Berrien County.

Dr. Evelyn Weeks of Ann Arbor is carrying on the Women's Classes begun in Gogebic County by Dr. Corneliuson. Dr. Corneliuson is on leave of absence for a short time.

Child care classes in schools in Lenawee County are being taught by Bertha Cooper, R.N., and similar classes in Delta County are being conducted by Annette Fox. Both Miss Cooper and Miss Fox are staff nurses of the Bureau of Child Hygiene and Public Health Nursing.

REGISTRATION AT 114TH ANNUAL MEETING

September 11 to 13, 1934

Members by Counties

Alpena	2
Barry	7
Bay	7
Berrien	7
Branch	10
Calhoun	89
Cass	3
Chippewa-Mackinac	3
Clinton	1
Eaton	12
Genesee	30
Grand Traverse-Leelanau	1
Graiot-Isabella-Clare	5
Hillsdale	10
Houghton-Baraga-Keweenaw	3
Huron-Sanilac	2
Ingham	39
Ionia-Montcalm	9
Jackson	23
Kalamazoo-Van Buren-Allegan	62
Kent	72
Lapeer	4
Lenawee	2
Livingston	3
Luce	1
Macomb	3
Manistee	4
Marquette-Alger	1
Mason	1
Mecosta	4
Monroe	1
Muskegon	11
Northern Michigan	2
Oakland	10
Otsego-Montmorency-Crawford-Oscoda-Roscommon-Ogemaw	2
Ottawa	8
Ontonagon	1
Saginaw	19
Shiawassee	5
St. Clair	8
St. Joseph	4
Tuscola	4
Washtenaw	23
Wexford	7
Wayne	105
Ladies, Guests and Exhibitors	338
Total	968

OBITUARY

Dr. George Russell Beck

Dr. George Russell Beck of Detroit is dead at the age of thirty-one years. He was one of the younger members of the Wayne County Medical Society and very popular with those who knew him best. He received his preliminary education in Detroit and graduated from the Detroit Eastern High School in 1919. After preliminary medical work at what is now the Wayne University he entered the School of Medicine at the University of Michigan in 1922, graduating in 1926. The next three years were spent as interne at Harper Hospital and also as Resident in Obstetrics and Gynecology at Herman Kiefer and Woman's Hospitals. Dr. Beck had been in private practice less than five years. He is survived by his wife, formerly Miss Janet Carleton of Lansing, whom he married last spring. The young couple were spending their vacation at Northport, Michigan when Dr. Beck was drowned on August 11, 1934.

Dr. James A. Kimzey

Dr. J. A. Kimzey of Detroit died at the age of fifty-seven years, following a heart attack while swimming at Belle Isle. He was a veteran of the Spanish American war. He is survived by four children, Albert, Blanche, Ruth and John, and four brothers, two of whom are physicians. Dr. Kimzey was an active member of the Wayne County Medical Society, Michigan State Medical Society and American Medical Association.

Dr. Robert G. MacKenzie

Dr. Robert G. MacKenzie, Frankfort, Michigan, died suddenly of a heart attack at 1:30 on the morning of Friday, June 8, 1934. He had attended the graduation exercises of the Frankfort High School on Thursday evening, where he saw his youngest son, John, graduate.

Dr. MacKenzie was born in 1882 at Chester, Illinois, the son of a physician, William R. MacKenzie, who was a graduate of the University of Michigan Medical School in 1873, and Nellie Gordon MacKenzie. He was graduated from Smith Academy, St. Louis, Missouri, and received his medical degree from the University of Michigan in 1907. He was married to Marian Cole of Chester, Illinois, in 1908.

Dr. MacKenzie started practice in Ann Arbor as assistant to the late Dr. C. G. Darling, and also was the staff of the late Dr. C. DeNancrede. In 1911, he was appointed head of the obstetrical department of St. Joseph's Mercy Hospital and helped to dedicate the new building in 1915. He continued his practice and connection with the Hospital until 1926, when ill health brought on by his heroic work during the influenza epidemic of 1918 and 1919 forced him to abandon his Ann Arbor practice. He moved to Frankfort and took over the practice of Dr. H. J. Kinne.

Soon after his graduation from medical school, Dr. MacKenzie studied in Vienna and was a member of the Vienna branch of the American Medical Association. He was a member of the American Medical Association, Delta Tau Delta, Phi Rho Sigma, Zeta Gamma Grotto, and of the Masonic organization. In 1913, Dr. MacKenzie was elected mayor of Ann Arbor, the youngest mayor the city ever had.

Dr. MacKenzie combined in a most happy way the best expression of modern practice, while exemplifying the finest qualities of the time-honored

family doctor. His sincere interest in all those coming to him would have made him loved and trusted even without the skill which he possessed to such a high degree. The writer was fortunate in knowing him in his early days of practice in Ann Arbor, and later in Frankfort where he had to be content with a less active life. Although handicapped in health he never complained but continued to the last to give his best. And his best was good, indeed.

He leaves his widow, Marian C. MacKenzie and two sons, Robert and John, now living in Ann Arbor; his mother, Mrs. Wm. R. MacKenzie, of Chester, Illinois, and a sister, Mrs. Elmer Gant, of St. Louis, Missouri.

J. D. B.

Dr. George B. McCallum

One of the most useful professional lives that Monroe County has known was brought to an end October 1, 1934, when death claimed Dr. George B. McCallum. Doctor McCallum was born October 5, 1855, at Ann Arbor and came to Monroe to practice in 1881. He was one of six physicians who on October 31, 1895, met to form the Monroe County Medical Society.

It is of interest to note that his interest in scientific medicine caused him to establish a large clipping file which was well indexed and which four years ago exceeded 50,000 clippings.

Doctor McCallum was an honorary member of the Michigan State Medical Society. A brother in Pontiac is the closest surviving relative.

The following resolutions were passed by the Monroe County Medical Society:

WHEREAS, Dr. George Barclay McCallum, a founder and charter member of the Monroe County Medical Society, has passed from our midst into the Great Beyond, and it is the desire of the society to testify its respect for his career among us and for his sterling character: Now, therefore, be it

RESOLVED, That we, the members of the Monroe County Medical Society, do make this record of our affectionate regard for our departed friend and brother physician. He was one of a small group who organized this society. He was its first secretary. Its original constitution appears in the record-book in his painstaking handwriting. Up until recent years when his strength began to wane, he was a regular attendant of the society meetings and participated in its various activities.

His long career as a physician was one of highest integrity and professional and scientific attainment. His kindness to all, his charity to the needy, his unwearied effort in the care of the sick are well known to his fellow practitioners and to the community in general. They have earned for him a monument of respect in the minds of all who knew him.

RESOLVED, That these resolutions be entered upon the minutes of this society, and a copy thereof be sent to the family of our late brother.

FLORENCE AMES, Secretary.
Monroe County Medical Society.

VALUE OF FRIEDMAN TEST IN DIAGNOSIS OF INTRA-UTERINE AND EXTRA-UTERINE PREGNANCY

Morris A. Goldberger, Udall J. Salmon and Robert T. Frank, New York (*Journal A. M. A.*, Oct. 20, 1934), point out that in 1,093 normal intra-uterine pregnancies the percentage of false positive Friedman tests was 0.09. The percentage of false negatives was 0.55. This small percentage of error, as compared to other reports, is attributed to the fact that duplicate tests were performed. At least 3.4 per cent of rabbits appear to be refractory to the Friedman test. In ectopic pregnancy, the percentage of false negatives in a series of forty-four cases was 32. The high percentage of negative tests in ectopic pregnancy is accounted for by the presence in these cases of dead or degenerated villi. In both intra-uterine and extra-uterine pregnancies the Friedman test is dependent on the viability of the chorion. In missed abortion the Friedman test may remain positive for as long as thirty days after death of the fetus. In incomplete abortion the Friedman test may be positive. The presence of a viable fetus can be determined by study of the female sex hormone of the blood. In the diagnosis of ectopic gestation the Friedman test is of value only in cases in which it is positive. If the test is negative in a case of suspected ectopic pregnancy, the clinical history and observations should determine the diagnosis.

GENERAL NEWS AND ANNOUNCEMENTS

David Stapleton of Detroit, son of Dr. and Mrs. W. J. Stapleton, Jr., was married to Miss Mary Philips of New Jersey on August 30.

Dr. and Mrs. N. A. Herring of Niles, Michigan, left for an extended automobile tour through the Southern States to St. Petersburg, Florida, where they intend to spend the winter.

Dr. Kenneth C. Pierce of Dowagiac, and Miss Gertrude Eckhout of Ann Arbor were married on October the ninth. Dr. Pierce is the oldest son of Dr. and Mrs. Frank Pierce of Detroit.

Miss Marian Davis of Ann Arbor, daughter of Dr. and Mrs. James E. Davis, was married to Dr. G. W. Hammond of Ann Arbor on October 1, 1934. Dr. James E. Davis, father of the bride, is Professor of Pathology at the Wayne University, Detroit, and Dr. Hammond, the groom, is on the staff of the University Medical School.

Of 3,539 hospitals of 25 beds or more in the United States and Canada included in this year's survey, 2,480 won places on the list approved by the American College of Surgeons. Those in the Detroit area are: Charles Godwin Jennings Hospital, Children's Hospital of Michigan, Delray General, Detroit Eye, Ear, Nose and Throat; East Side General, Evangelical, Deaconess, Florence Crittenton Hospital and Home, Grace, Harper, Henry Ford, Herman Kiefer, Jefferson Clinic and Diagnostic, Lincoln, Michigan Mutual, Parkside, Providence, Receiving, St. Joseph's Mercy, St. Mary's, United States Marine, Woman's, Eloise Infirmary, St. Francis Hospital of Hamtramck, Highland Park General, Wyandotte General.

A group of twenty-one physicians of this state has been added to the list of this year's special lecturers in post-graduate medicine at the University of Michigan by action of the Board of Regents. The group now numbers eighty. The new men from Detroit are: Drs. William Blodgett, John J. Corbett, Ward H. Harryman, Harther L. Keim, John C. Montgomery, Richard H. Morgan, Robert C. Jamieson, William S. O'Donnell, Charles W. Peabody, Frank J. Sladen, George Van Rhee and Donald C. Young; Kalamazoo—Charles E. Boys; Grand Rapids—A. M. Campbell, Thomas D. Gordon and John T. Hodgen; Flint—Myrton S. Chambers; Battle Creek—Elmer L. Eggleston, Martin A. Mortensen and Russell L. Mustard, and Ypsilanti—Orus R. Yoder.

CAPTAIN ALLEN McLEAN

The numerous friends of Dr. Angus McLean of Detroit extend their sympathy in the death of his brother, Captain Allen McLean, of San Diego, California. The death of Captain McLean occurred at his home September 29. The remains were cremated and burial took place in the Arlington National Cemetery, Washington, D. C. Captain Allen McLean graduated from the Detroit College of Medicine in 1895 and served his internship in Harper Hos-

pital. He entered army service immediately, serving with the Thirty-first Michigan Infantry in the Spanish-American War. He spent most of his life in medical service in the Navy. Both Dr. Angus and Dr. Allen McLean served in Paris with the Peace Commission, Captain McLean receiving his appointment from Josephus Daniels, Secretary of the Navy in President Wilson's cabinet. He was retired from active service three years ago because of poor health. Captain McLean was born sixty-two years ago in Oxford, Michigan.

UNIVERSITY OF MICHIGAN PEDIATRICS

The 1934 meeting of the University of Michigan Pediatrics and Infectious Disease Society will be held in Ann Arbor, November 23 and 24. Every physician interested in the program is invited to attend this meeting. The program will consist of brief talks averaging less than fifteen minutes. Friday, November 23, at two o'clock, a Clinical session will be held. The subjects and speakers are as follows: "The Early Diagnosis of Whooping Cough and the Use of Vaccine as a Preventive Measure," Dr. L. W. Sauer, Evanston, Ill.; "Leprosy in Children," Dr. Malcolm Soule, Ann Arbor; "Report of a Severe Case of Tetanus with Recovery—Special Reference to Treatment," Dr. P. S. Bradshaw, Ann Arbor; "The Feeding of Premature Infants," Dr. Harold Rothbart, Ann Arbor; "Report of a Case of Pylorospasm," Dr. M. H. Worth, Ann Arbor; "Unusual Congenital Deformities" (Lantern slides), Dr. M. Cooperstock, Marquette; "Influenzal Meningitis—The Treatment by Influenzal Meningitis Serum," Dr. Harry Towsley, Ann Arbor; "The Value of Venoclysis in the Infectious Diarrheas of Infancy," Dr. P. S. Bradshaw, Ann Arbor; "Hypoglycemia in Children, Its Clinical Picture and Treatment, Report of a Case," Dr. Joseph Jaudon, Ann Arbor; "Myasthenia Gravis in Children, Report of a Case," Dr. Harold Rothbart, Ann Arbor; "Report of a Case of Chronic Infectious Arthritis (Stills Syndrome) Successfully Treated with Foreign Protein," Dr. Harry Towsley, Ann Arbor.

The evening session will consist of an open forum on Endocrines, when the following subjects will be presented: "The 1934 Status of Research on Endocrines," Dr. E. A. Sharp, Detroit; "Endocrinopathies Related to the Pituitary During Infancy and Childhood," Dr. R. L. Schaefer, Detroit; "Endocrinopathies Related to the Thyroid During Infancy and Childhood," Dr. John L. Law, Ann Arbor.

Saturday morning, November 24, there will be a scientific session on the subject of Allergy with papers as follows: "The Effect of Pollen Therapy on Skin Test Sensitivity in Relation to the Relief of Symptoms," Dr. Samuel Levin, Detroit; "The Standardization of Allergic Antigens for Intradermal Testing and Treatment," Dr. D. M. Cowie, Dr. Emma Wardell; "The Preservation of Allergic Antigens Against Bacterial Contamination and Color Change. B. The Prevention of Skin Irritation Induced by Intradermal Testing," Dr. Meryl Fenton, Ann Arbor.

DR. F. E. HANSEN SEES STATE MEDICINE IN OPERATION

Dr. F. E. Hansen of Detroit has just returned from a two months' sojourn in Europe. The larger portion of this time was spent in post-graduate work at the municipal hospital of Copenhagen, Denmark. Dr. Hansen reports spending a very interesting time, during which he had splendid opportunities for observing the practice of medicine in

one of the smaller countries of Europe. He says that Denmark has a system of state medicine, so-called, with all the term applies; that is, it applies to those with incomes less than what would correspond to \$1,200 a year in American money at the present rate of exchange, who receive medical care in the hospitals which are owned and operated by the State. There are a good many doctors, however, in Denmark who are in private practice and all are apparently doing well. No citizen whose annual income is over \$1,200 is eligible for this kind of medical care. He must employ a private physician. Dr. Hansen says that even in private practice the patient can not get out of paying his physician his fee; if he refuses to meet this obligation, payment must be made to the physician by the municipality, who will in turn come on the recalcitrant patient for it.

Asked if he thought state medicine would be a good thing for the State of Michigan or the United States, he replied that he would not care to see state medicine adopted in this country even though it appeared to give satisfaction in Denmark. It would interfere materially with the old time professional relations between physician and patient and it tended to produce a sort of class system among the medical profession whereby those attached to the state-owned hospitals looked with a certain contempt on the outside doctor. Dr. Hansen, however, reported general prosperity in Denmark, both among the laity as well as the general medical profession. This was due largely to the fact that Denmark was an agricultural country with an ideal market for her produce in England. He was very favorably impressed with the post-graduate facilities offered in Denmark's capital. He said that leaders of the profession took the utmost pains with the American doctor, whom they addressed fluently in the English language. Copenhagen as a medical center had not been tainted with commercialism, as have been some of the better known post-graduate centers in Europe.

TREATMENT OF AMEBIASIS

Alfred C. Reed, San Francisco (*Journal A. M. A.*, October 20, 1934), discusses the treatment of amebiasis in strictly practical terms as condensed from soundly supported scientific evidence and personal experience. Since the introduction of ipecac into Europe in 1672, therapy has been influenced by three tendencies. 1. Ideas of etiology and methods of diagnosis have improved. 2. There was a tendency to use complex formulas and substances found useful in other diseases, the causes of which were biologically related, as in the case of quinine. 3. There has been the tendency to seek active principles, simple preparations and the exact methods of chemotherapeutic study, with attention to the relation between chemical structure and physiologic action. The author states that the scheme of treatment must be based on the colonic infection and gives the treatment in the seven general types of clinical picture that must be considered from the standpoint of treatment to be selected: (1) dysentery with acute, malignant onset and course, (2) dysentery or diarrhea with subacute onset and course, (3) chronic amebiasis with recurring, inconstant or absent symptoms, (4) extraintestinal abscess or ulceration, (5) complications of other diseases or of a surgical nature, and (6) sequelae such as sprue, chronic simple colitis, chronic ulcerative colitis, cancer, chronic infections such as tuberculosis and mechanical defects such as stricture. To complete the classification, a final group must be added, (7) comprising toxic results of drugs used.

THE DOCTOR'S LIBRARY

Acknowledgment of all books received will be made in this column and this will be deemed by us a full compensation to those sending them. A selection will be made for review, as expedient.

THE AUTONOMIC NERVOUS SYSTEM. By Albert Kuntz, Ph.D., M.D., Professor of Micro-anatomy in St. Louis University School of Medicine, second edition, enlarged and thoroughly revised, 679 pp., 73 figs., Lea & Febiger, Philadelphia, 1934.

The second edition of "The Autonomic Nervous System" is nearly a fifth larger than its predecessor of five years ago. Changes have been made throughout though the order and arrangement are the same. The first quarter of the work deals with the general anatomy, histology, physiology and development of the system. The next half is devoted to the innervation of circulatory, respiratory, digestive and genito-urinary organs and to the innervation of the eye and of skeletal muscle. Chapters are then devoted to referred pain, to autonomic pathology, to the system in disease and to sympathetic surgery. These latter chapters are considerably more expanded than in the earlier work. To a large extent, the book is a critical review of literature though in some cases contradictory studies are merely abstracted without comment. Nearly 120 pages of bibliography (almost twice the original amount) are given.

RECENT ADVANCE IN ANATOMY. By H. Woollard, M.D., Elder Professor of Anatomy, University of Adelaide, 302 pages, 73 figures, 4 colored plates. P. Blakiston's Son & Co., Phila., \$3.50.

In anatomy, the tendency of research is toward patient description of structural details. Such details are relatively meaningless in themselves and are often difficult to follow by those who are not trained anatomists. Consequently, the practising physician whose source book is Gray's Anatomy or some such textbook is unaware of progress in the field. Professor Woollard has selected from many fields of research those topics which either present important physiological relationships or are associated with new methods of research. He has ignored the purely descriptive subject matter of conventional anatomy. Some of the sixteen chapters deal with: microdissection, tissue culture, growth centers in development, vital staining, the changes of the female generative system, the cerebrospinal fluid, and the origin of blood cells. Several chapters deal with the functional anatomy of the nervous system.

NEUROLOGIC MANIFESTATIONS OF HYPERINSULINISM AND OTHER HYPOGLYCEMIC STATES

Edward H. Rynearson and Frederick P. Moersch, Rochester, Minn. (*Journal A. M. A.*, Oct. 20, 1934), limit their discussion to conditions that are the antithesis of diabetes, in which symptoms are produced by an insufficiency of sugar in contrast to an excess and they concentrate their attention more on symptoms than on pathologic conditions or on treatment, and especially on the preponderance of neurologic symptoms in these conditions. They emphasize the universal occurrence of neurologic and psychic symptoms in severe hypoglycemia and hope that through the coöperation of neurologists and psychiatrists many heretofore undiagnosed cases of hypoglycemia may be discovered. In the light of present inadequate knowledge, medical treatment is unsatisfactory, and it is only by early surgical exploration in these cases of hypoglycemia that adenomas of the island cells of the pancreas may be found and successfully removed. It is to be hoped that it will be possible to separate accurately the various types of hypoglycemia and to treat each type better.

The Secretary of the Society will please notify the State Secretary immediately of any errors or change in these offices.

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SURGERY IN THE MANAGEMENT OF HEART DISEASE*

ELLIOTT C. CUTLER, M.D.†

BOSTON, MASSACHUSETTS

I appreciate the implied compliment in asking a surgeon to discuss with you the therapy of heart disease. For some two thousand years the physician has looked upon the heart as a sacred domain into which the surgeon was forbidden to enter. Indeed, even among the fraternity of surgeons, to touch the heart was considered almost unethical not longer than fifty years ago.⁸ Now you embarrass me with the grand title, "Surgery in the Management of Heart Disease." I take it that you wish me to discuss only those disorders of the heart that are chronic and with which you have special dealings.

Since, however, you have given me a title so broad that its latitude would bring discomfiture even to a politician, I must recall to you that, as usual, surgery entered the domain of cardiac surgery by way of trauma. Injuries to the heart in the days preceding gunpowder were not immediately and always fatal and though we think of our day as full of wars and bickerings we must move much more violently to approach even the quarrelling record of a century and more ago. Thus it seemed wise in that time to devote much study to wounds of the heart. The result of all this culminated in the knowledge that the heart could be treated surgically much as were other organs. Slowly the treatment of wounds of the heart by surgical methods became an accepted procedure.

Out of this beginning has sprung a variable progeny, not all of whom have reached years of discretion. Thus I wish today to emphasize chiefly the youngest child; that is, the application of the procedure of total removal of the thyroid gland to angina pectoris and congestive failure. Many offspring have preceded this infant and most of them are accepted and need no sponsors at this time but this procedure of total thyroidectomy stands, like the baby before the baptismal font, not, as the old Church of England says, "conceived in sin" but still surrounded by that murky haze of indecision and worry which envelops the unknown.

You all accept pericardiostomy for acute pericarditis and I hope that the recent excellent articles concerning pericardiectomy² for chronic adherent pericardium and the splendid experimental work demonstrating its efficacy have been accepted and digested by you all.

Not long ago division of the sympathetic nervous supply to the heart was proposed as a method for treating angina pectoris.⁹ A great experience in this lies behind this, not entirely digested to be sure but definite at least in the conclusion that, no matter how

*From the Surgical Clinic of the Peter Bent Brigham Hospital, Boston. Presented before the Michigan State Medical Society, Battle Creek, Michigan, September 13, 1934.

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complete the procedure, or whether the interruption of the nervous pathways be accomplished by surgery or by alcohol injection of the nerves, the relief of pain is variable and not complete. Surgery is perhaps a more certain therapeutic measure than alcohol injection and less apt to leave undesirable sequelæ, but it can be stated that the attack upon the sympathetic nervous system for this dilemma is still an unsatisfactory method of treatment. The great enthusiasm which surrounded this method from its commencement has resulted in an enormous increase in our knowledge of the function of the sympathetic nervous system, and, since it came at a time when other disorders of the vascular system were also being treated by an attack upon this same system, we have added considerably to our scientific knowledge. For this we, as practitioners of the art, should be very grateful, and also proud of the share won by clinicians.

Another recent example of the application of surgery to disorders of the heart is seen in the attempt to treat stenosis of the mitral valve by enlarging it through surgical methods.¹⁰ The great amount of experimental work which preceded the first attempt on a human being revealed the feasibility of the procedure and established the technical method. The operation consisted of the insertion through the cardiac muscle of an instrument which was used to notch, stretch or enlarge the stenosed valve by removing a segment of it. The operation is one of considerable magnitude and to date has not proven either safe or valuable enough to justify further discussion.

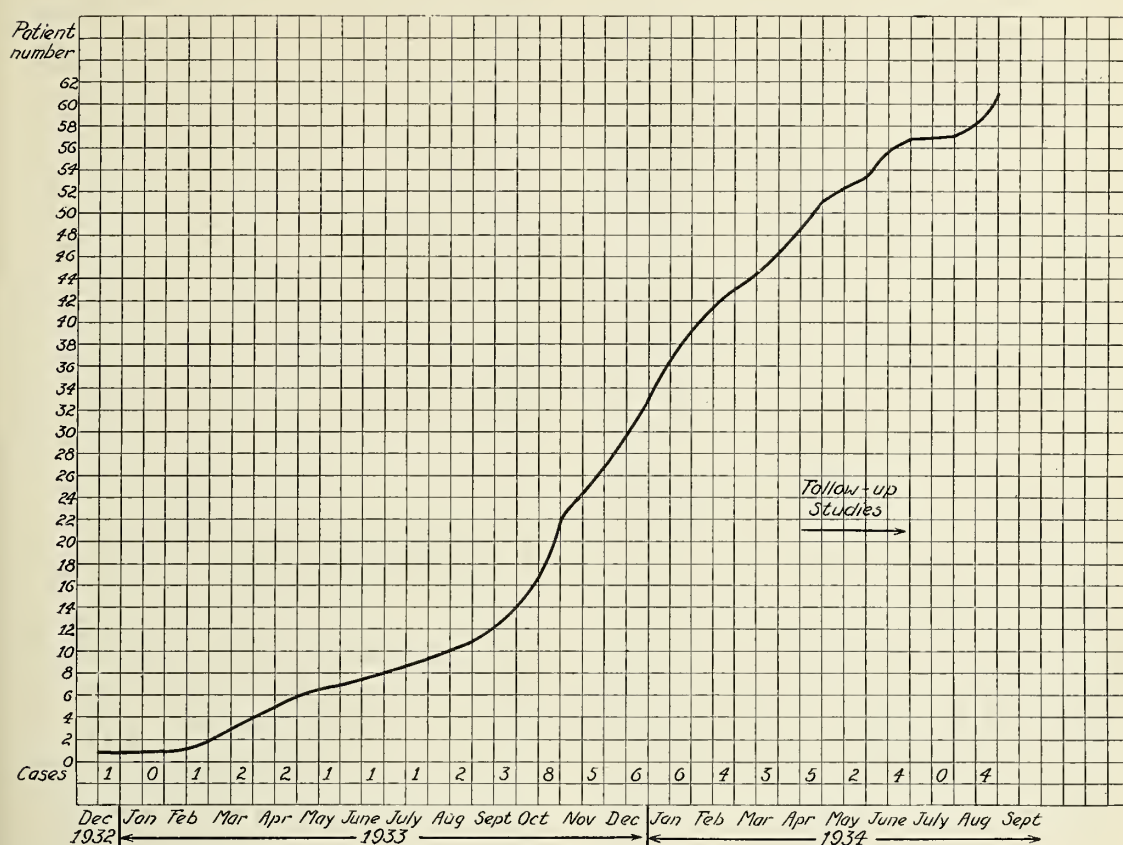
This brings us to the matter we desire to present; that is, total thyroidectomy in the treatment of angina pectoris and congestive failure. The origins of this procedure are found in both laboratory investigations and bedside observations. The investigations of Blumgart⁵ into the factors determining the rate of blood flow have shown that the circulatory rate roughly parallels the metabolic demands. Thus when the basal metabolic rate is elevated, as in Graves' disease, the rate of blood flow is accelerated and when the basal metabolic rate is lowered, as in myxedema, the rate of blood flow is slowed. It occurred to him and his collaborator, Levine,⁶ that if the decompensation could not be relieved by rest and drug therapy, perhaps the lowering of the basal met-

abolic rate by thyroidectomy might create a condition where the demands upon the circulation would be lessened and that by thus diminishing the demand to a fixed and lowered supply equilibrium might be established and compensation occur.

Meanwhile our clinical experience had shown us the close relation between cardiac action and thyroid activity. This first resulted in the recognition of the so-called "thyro-cardiac" group; that is, patients with cardiac decompensation in whom the cardiac injury is due to repeated bouts of thyroid intoxication. As a rule, such patients suffer from the milder form of thyroid intoxication that occurs with toxic adenomata rather than from repeated bouts of Graves' disease. The explanation for this lies in the fact that with the adenomatous gland the intoxication is so slight that it is not easily recognized and thus the injury to the heart is continued over a long period of time. The fact that auricular fibrillation is common with this form of heart failure is in keeping with the scientific information that the active principle of the thyroid gland is more effective than other substances in bringing about this condition. It is also of interest, and of great importance to our patients, that this injury is not permanent and that the fibrillation disappears with removal of the intoxication through the operation of thyroidectomy. In this group are found some of the most satisfactory therapeutic results in all medicine, for patients who have been bedridden with all the signs and symptoms of advanced cardiac failure have been restored to an active and almost normal life following removal of the thyroid gland.

But many other clinical observations have indicated this close relation between the heart and the thyroid gland, a matter which was first fully discussed by Francois Franck as early as 1899.¹³ Certain of the tachycardias and arrhythmias have been benefited by thyroidectomy and your own brilliant cardiologist, Frank Wilson,¹ has pointed out that toxic thyroid conditions may be recognized by a study of cardiac manifestations long before there is a demonstrable elevation of the basal metabolic rate. This latter finding is of the greatest interest, for, as we will see later, it is this recent tendency to view those thyroid functions relating to the basal metabolic rate and the circulatory manifestations of thyrotoxicosis as two entities, which

CHART I.—TOTAL THYROIDECTOMY FOR ANGINA PECTORIS AND CARDIAC FAILURE



may respond to proper stimulation either singly or in unison, that may explain the benefit which accrues to patients with heart disease following thyroidectomy.

Thus, we can see not only that surgery is taking part in the treatment of disorders of the heart but that the recent acquisition of knowledge concerning the thyroid gland has led to a justifiable attempt to apply this knowledge to heart disease.

Subtotal thyroidectomy for cardiac failure was first practiced in 1932 and reported by Blumgart, Levine and Berlin.⁶ Improvement followed the procedure but their studies reported that within a short period of time, doubtless as the remaining fragment of the gland regenerated, the previous condition recurred. However, the immediate results were so encouraging that they justified the proposal that total thyroidectomy be carried out. This procedure has been utilized for two years^{3,4,7,9,14,16} and it seems appropriate to summarize and study its accomplishments. Our own experience covers sixty-one cases; twenty-three submitted to

the operation for congestive failure and thirty-one for angina pectoris. The other cases were submitted to this operation for conditions not to be discussed at this time.

Chart I represents the total cases plotted against the time-interval given for study. One case has been under observation for as long as nineteen months. It is of great importance to consider this interval, since the deliberate attempt to create myxedema leaves one open to the criticism that an unsupportable condition may be created in our patients. We have found that this fear can be dissipated, for with thyroid therapy (usually one-quarter grain tablet of Armour's extract daily is sufficient) patients can be maintained in an apparently normal condition, at least as long as our observation has been carried out.

Chart II represents the immediate surgical mortality and morbidity. Attention should first be called to the fact that this being a new undertaking we are presented only with the most formidable type of case. Physicians are naturally reluctant to essay

new types of therapy, particularly when it involves taking any risk. Thus, in spite of the scientific background already presented, at least the first cases submitted to total thyroidectomy, both in the group of cardiac decompensation and angina pectoris, were patients in whom life expectancy was extremely short. Those people with cardiac decompensation were practically derelicts. One of the patients had been hospitalized six times in the previous two years and had been an inhabitant of hospitals with marked mitral stenosis for some six to eight years. This patient was bedridden with fluid in the abdomen and chest as well as with marked edema of the legs, orthopneic, dyspneic and with a tremendously reduced vital capacity. One of the cases of hypertensive myocardial disease was practically in extremis, being brought to the hospital in coma and with a blood pressure over 200, hemorrhages in both retinae, fluid in the abdomen and with complete decompensation. In the field of angina pectoris, the patients were equally serious risks. The first few cases had had bouts of mild coronary closure, were suffering from daily severe attacks of angina and the anginal attacks occurred when the patient was at rest. One of these patients refused to get up in a chair for examination, for she said that she had had the disease for six years and that the slightest exertion brought on excruciating attacks which caused her the greatest anxiety.

CHART II.—TOTAL THYROIDECTOMY
Surgical Mortality and Morbidity Statistics

Total Number of Cases.....	54
<i>Cardiac Decompensation</i>	
Valvular Disease	15}
Myocardial Disease	8} 23
Deaths	
Immediate Postoperative	2 (8.7%) }
Late Unrelated to Operation.....	6 (26.1%) } 8
<i>Angina Pectoris</i>	31
Deaths	
Immediate Postoperative	2 (6.5%) }
Late Unrelated to Operation.....	5 (16.1%) } 7
<i>Complications</i>	
Parathyroid Tetany	5 (9.3%) }
Recurrent Laryngeal Nerve Injury	4 (7.4%) } 9

In view of the type of case selected, the mortality statistics are not alarming. Had I not the greatest confidence in my medical colleagues, and had I not also behind me the experience of attempting to treat almost equally incapacitated people by the far more serious surgical procedure of mitral val-

vulotomy, I never would have accepted for operation most of the patients now presented.

The immediate postoperative mortality in the cardiac decompensation group of 8.7 per cent and in the angina pectoris group of 6.5 per cent is surprisingly satisfactory in view of the type of patient. And the clinical benefit to the survivors was so great as to justify entirely the procedure. In the group of cardiac decompensation cases there were no particular complications, the operations were satisfactorily performed under local anesthesia without apparently burdening the patient unduly. In the angina pectoris group we were confronted with an even less difficult task and the only complications which confronted us from the surgical point of view were the simple mechanical factors of parathyroid tetany from removing all of the parathyroid glands or injury to the recurrent laryngeal nerves. Parathyroid tetany itself occurred in almost 10 per cent of the cases but was never a very serious complication since in all cases we were able to control the mild signs of hypersensitivity by the utilization of five drops of viosterol once or twice daily and four to six grams of calcium lactate daily. The lowest blood calcium readings were 6.6 mgm. per cent and 6.8 mgm. per cent in two patients, these readings being made on the thirtieth and fifteenth day postoperative, but mild signs of tetany were noticed in one case as early as the fourth postoperative day and in another case no signs were noticed until the patient was in myxedema thirty days following operation. When the mild tetany was controlled by the above medication, the exhibition of thyroid extract which these patients were given to counteract myxedema usually produced a further fall in the circulating blood calcium though without the patient's manifesting signs of tetany.

Injury to the recurrent laryngeal nerves occurred four times; a single side being involved in each case and all but one of these unfortunate happenings coming early in our surgical experience. This, of course, relates to the technical performance of total thyroidectomy and though the operation is not at all formidable it must be carried out precisely and carefully. We elect the use of novocaine in order that our patients may talk to us during that part of the procedure when the recurrent nerves are being iso-

lated, for it is certain that only by complete exposure of these nerves before removal of the gland and the separation of the nerve from the posterior capsule can this accident be avoided.

We have tabulated also the patients who have died at some time following their discharge from the hospital from causes not related to the operation, since it is wise to have a figure for the expected longevity of people of this type. Not, however, until a period of observation has been carried on for five years can one say whether or not cases with total thyroidectomy live, on the whole, longer than similarly affected people without the procedure. Insofar as one can judge now, the operation in no way contributed to the later deaths.

CHART III.—TOTAL THYROIDECTOMY

Clinical Results in 34 Patients Who Have Lived More Than 3 Months Since Operation

Group II Cardiac Decompensation (10 Valvular Disease, 2 Myocardial)	
Excellent	5
Good	4
Fair	3
Total	12
Group II Angina Pectoris	
Excellent	12
Good	4
Fair	6
Total	22

Excellent—restored to active life without complaints
Good—greatly improved but inactive (decompensation cases) or occasional pain (angina cases)
Fair—improved but still incapacitated

Chart III represents an appraisal of the results we have achieved thus far. We have tabulated only those patients who have lived more than three months since the operation though our experience would tend to show that patients who show improvement at one month are almost certain to show the same or more improvement at three months. Our experience has demonstrated that it takes from eight to ten weeks for the patient to enter myxedema and achieve a basal metabolic rate of around —20. At this point the basal metabolic demands of the body being lowered, the demands upon the circulation are decreased and those patients in the cardiac decompensation group gradually come into compensation, the improvement in some cases being remarkable. Several patients, previously bedridden and not benefited by a long period of rest and digitalis therapy, have follow-

ing thyroidectomy returned to a moderately active life. Edema, cyanosis and dyspnea disappear, the vital capacity rises, and the patient's outlook is entirely changed as compensation is achieved. In the group of cardiac decompensation nine of the twelve cases showed very definite improvement and as these are all cases in which rest and drug therapy had achieved almost no relief the increment of improvement is remarkable. In the angina pectoris group, sixteen of the twenty-two cases gave us satisfactory results, and again let me remind you that these were practically all cases of angina decubitus, taking large amounts of nitroglycerine daily. Certainly in the field of sympathectomy for angina pectoris no such spectacular improvement has resulted.

Discussion. There is no opportunity to report here all of the elaborate chemical and clinical studies that have been carried out. You will have noted that in the congestive failure group I have spoken of the improvement of the vital capacity as compensation was achieved. One of the most marked concomitants of the operation is, of course, a heightening of the cholesterol curve as myxedema is entered and our studies of the cholesterol content in the blood stream have given us great faith in the level of this substance in the blood stream as indication of thyroid activity. In fact, when it has contradicted basal metabolic rates, a second basal metabolic determination has usually fallen into line with the cholesterol level so that we have utilized this test as an indication of whether or not our patients are really in myxedema. In the congestive failure group, it has been necessary to allow practically all patients to enter myxedema before improvement occurs. We have then gradually fed them thyroid extract to the highest point at which they can hold their improvement. The feeding of thyroid extract in surgical myxedema is different from feeding thyroid to the spontaneous form of myxedema, for it seems to require far less thyroid extract.¹¹ One-half grain of thyroid extract daily (Armour's) seems sufficient to start any patient's basal metabolic rate on an upward curve. Once a level has been achieved we have been able to hold that level by giving the patient one-quarter grain of thyroid extract (Armour's) daily. In the angina pectoris group, a different situation has occurred. In the first place, the patients ex-

perience an almost immediate relief and this relief occurs long before the basal metabolic rate falls so that a lessening of the work phenomenon cannot be the correct explanation. Moreover, equally early comes a shift in the response to injected adrenalin. Experience with the utilization of adrenalin subcutaneously as a test for angina before and after operation led us to the interesting observation that a dose of adrenalin which would provoke anginal pain preceding thyroidectomy would not provoke that pain immediately following operation.¹² This strongly suggested that we were dealing with something different from an effect produced by a fall in the basal metabolic demand. The matter was then taken to the laboratory and Dr. Philip Shambaugh repeated the experimental set-up of Sutton and Lueth, placing ligatures around the coronary artery of an animal, allowing the animal to recover, and then studying the pain response by tightening the ligatures and thus impeding coronary flow. He then modified this experiment to study the effect of adrenalin. The ligatures were led over pulleys and so arranged that they could be weighted. At this point a vasopressor dose of adrenalin was injected without causing any disturbance to the animal. If, however, the ligature was weighted with 100 gm., creating partial coronary obstruction, then the same dose of adrenalin called forth definite painful response. These experiments have already been published¹⁷ and our deductions from our clinical studies and this experimental work are that thyroidectomy seems to reduce the sensitivity of the cardiac apparatus. Previous work¹⁵ has already shown that thyroidectomy does not modify the actual output of adrenalin itself. In line with these observations are our clinical findings in the group of patients with angina pectoris. A lowered metabolic rate is apparently not always a necessary matter and only rarely do we have to maintain patients in this group at a level producing the clinical signs of myxedema. In fact, some of them have been kept at a practically normal basal metabolic rate following operation and yet have shown marked improvement in their symptomatology.

This short summary of the achievements of surgery in relation to heart disease should be of interest to medical men for it points out that the limitations of cardiac disease to

medical therapy alone, in the light of modern knowledge, is neither proper nor wise. It is the hope that some of these data presented today may prove of interest to you and of possible value to your patients.

BIBLIOGRAPHY

1. Barker, Paul S., Bohning, Anne L., and Wilson, Frank N.: Auricular fibrillation in Graves' disease. *Am. Heart J.*, 8:121, 1932.
2. Beck, Claude S., and Griswold, R. A.: Pericardiectomy in the treatment of the Pick syndrome. Experimental and clinical observations. *Arch. Surg.*, 21:1064-1111, 1930. Churchill, E. D.: Decortication of the heart (Delorme) for adhesive pericarditis. *Arch. Surg.*, 19:1457-1469, 1929.
3. Berlin, David: Therapeutic effect of thyroidectomy on congestive heart failure and angina pectoris. *Am. J. Surg.*, 21 (N. S.):173-183, 1933.
4. Blumgart, Herrman L., and Berlin, David D.: The importance of decreased cardiac work in the relief of angina pectoris by total ablation of the thyroid. *Proc. Am. Physiol. Soc.*, March, 1934.
5. Blumgart, H. L., and Yens, O. C.: The rate of blood flow as determined by a new method. *Am. J. Physiol.*, 72:1, 1925. Blumgart, H. L., Gargill, S. L., and Gilligan, D. R.: Studies on the velocity of blood flow: XIV. The circulation in myxedema with a comparison of the velocity of blood flow in myxedema and thyrotoxicosis. *J. Clin. Investigation*, 9:91, 1930. Blumgart, H. L., and Weiss, S.: Studies of the velocity of blood flow: V. The physiological and the pathological significance of the velocity of blood flow. *J. Clin. Investigation*, 4:199, 1927. X. The relation between the velocity of blood flow, the venous pressure and the vital capacity of the lungs in fifty patients with cardiovascular disease compared with similar measurements in fifty normal persons. *Ibid.*, 5:379, 1928. Blumgart, H. L.: The velocity of blood flow in health and disease: The velocity of blood flow in man and its relation to other measurements of the circulation. *Medicine*, 10:1, 1931.
6. Blumgart, Herrman L., Levine, Samuel A., and Berlin, David D.: Congestive heart failure and angina pectoris. The therapeutic effect of thyroidectomy on patients without clinical or pathologic evidence of thyroid toxicity. *Arch. Int. Med.*, 51:866-877, 1933.
7. Blumgart, Herrman L., Riseman, Joseph E. F., Davis, David, and Berlin, David D.: Therapeutic effect of total ablation of normal thyroid on congestive heart failure and angina pectoris. III. Early results in various types of cardiovascular disease and coincident pathologic states without clinical or pathologic evidence of thyroid toxicity. *Arch. Int. Med.*, 52:165-225, 1933.
8. Cutler, Elliott C., and Beck, Claude S.: Surgery of the heart and pericardium. Nelson's Loose-Leaf Surgery, Chapter 4, 233-386, 1927.
9. Cutler, Elliott C., and Levine, Samuel A.: Surgical methods for the relief of pain in angina pectoris, with especial reference to the value of total thyroidectomy. *Proc. Inter-State Post-Graduate Medical Assembly of North America*, Cleveland, Ohio, October, 1933.
10. Cutler, Elliott C., Levine, Samuel A., and Beck, Claude S.: The surgical treatment of mitral stenosis. *Arch. Surg.*, 9:689-821, 1924.
11. Eppinger, Eugene C., and Levine, Samuel A.: The medical care of patients following total thyroidectomy. *J. A. M. A.*, 102:2076-2078, 1934.
12. Eppinger, Eugene C., and Levine, Samuel A.: Effect of total thyroidectomy on response to adrenalin. *Proc. Soc. Exper. Biol. and Med.*, 31:485-487, 1934.
13. Franck, Francois. Signification physiologique de la résection du sympathique dans la maladie de Basedow, l'épilepsie, l'idiotie et le glaucome. *Bull. Acad. de méd.*, Paris, 41:565-594, 1899.
14. Friedman, Harry F., and Blumgart, Herrman L.: Treatment of chronic heart disease by lowering the metabolic rate. The necessity for total ablation of the thyroid. *J. A. M. A.*, 102:17-21, 1934.
15. Herring, P. T.: The influence of the thyroids on the function of the suprarenals. *Endocrinology*, 4:577, 1920.
16. Levine, Samuel A., Cutler, Elliott C., and Eppinger, Eugene C.: Thyroidectomy in the treatment of advanced congestive heart failure and angina pectoris. *New England J. Med.*, 209:667-679, 1933.
17. Shambaugh, Philip: Experimental angina pectoris in the dog. Effect of total thyroidectomy. *Proc. Soc. Exper. Biol. and Med.*, 31:978-979, 1934.

THE COMMON COLD*

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The common cold is one of the most prevalent of human diseases and, while it is not directly responsible for a large number of deaths, it is frequently the precursor of serious or fatal ailments. The discomfort attendant upon colds is in itself of sufficient importance in relation to the general well-being of mankind to warrant any steps being taken which might aid in the relief or prevention of this universal malady. It is probable that colds have been the heritage of civilized man through the ages but, strangely enough, very little attention was paid to this distressing disease until the beginning of the present century. This neglect was apparently due to the belief that colds were necessary evils and that little could be done about them. The rise of industry as a means of livelihood for the mass of individuals has undoubtedly focused attention upon upper respiratory tract infection, because, with increased industrialization, colds occurred more frequently due to the intimate contact of the workers and absences, due to upper respiratory tract infection, became a serious economic problem in industry.

If the oftentimes curious and strange theories held generally by individuals are put aside it is found that there are three main beliefs regarding the cause of colds. The first and oldest of these beliefs, that colds are due to exposure to cold or chilling, was accepted by scientific as well as lay opinion until the dawn of the bacteriological era and even today has many adherents. Everyone still "catches cold." In 1786, Thomas Hayes²³ wrote that "A cold arises from the effect of cold or moist air, applied to the surface of the body and lungs, from going too thinly clad, or exposing the body to cold air, after having been heated by exercise, or when the pores are open from drinking warm liquors." Although deductive reasoning gave ample support to this belief, no direct experimental evidence of the effect of chilling was available until 1913 when it was demonstrated⁵⁴ that the cooling of distant members of the body resulted in reflex changes in the nasal mucosa. A few years later Schade⁴⁷ showed that reflex vasomotor changes leading either to anemia, hyperemia or directly to irritative changes may occur

in the nasal mucosa as the effect of the application of cold to various body tissues. As far as the nasal mucosa was concerned a true cold catarrh accompanied by rawness and secretion might occur during or immediately after the cold trauma. Such disturbances were not accompanied by fever and disappeared within a day or two.

These observations were shortly followed by those of Mudd and his associates,^{40, 41} who found that chilling "causes reflex vasoconstriction and ischemia in the mucous membranes of the palate, faucial tonsils, oropharynx, and nasopharynx. . . . In four instances, exposure was followed by a cold or sore throat." It did not seem improbable to these observers "that the ischemia of the mucous membranes resulting from cutaneous chilling might so disturb the equilibrium between the host and the bacteria in the tonsillar crypts and folds of the pharyngeal mucosa as to excite infection." Greenburg²² confirmed the observations of Mudd and his co-workers in regard to the effects of chilling on the nasal mucosa, and in 1932 Winslow and Greenburg⁵⁸ reported that there was nothing to indicate that localized, as opposed to general, draughts had any special influence on respiratory infection. They conclude by saying: "So far as the work here reported may be significant, however, it does not confirm the general belief that chilling of the feet is especially harmful."

There are many other observers who are skeptical of the role played by chilling in the production of colds. Leonard Hill²⁶ has long inveighed against the possible effects of cold and holds that there is little proof that exposure to chill and draughts causes colds in healthy persons not exposed to infection. He believes that the "cause is not to be sought in meteorological conditions, but rather in crowding in overheated

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and stuffy rooms, in ill-feeding and in 'cod-dling.' The high incidence of illnesses spread by droplet infection in crowded dormitories" is cited by Hill as evidence in favor of his contention. Observations, designed to test the effect of chilling under natural conditions, such as those of Smillie⁵² in Boston have failed to produce upper respiratory tract infection. In this instance a group of individuals were greatly overheated in a small room and then, scantily clad, were exposed to the rigors of mid-winter until they were "chilled to the bone." No colds resulted.

The second belief regarding the cause of colds is that certain of the known micro-organisms commonly resident in the throat may, when the predisposing factors are operative, set up the infective process known as a cold. Soon after the investigations of Pasteur revealed the importance of bacteria in disease, Hüter²⁷ described a micrococcus which he believed to be of causal importance in colds. Following this observation numerous reports have appeared in which roles of etiological significance have been assigned to practically all of the micro-organisms that have been described as residents of the rhinopharynx. Thus we find the streptococci, pneumococci, micrococci, staphylococci, influenza bacilli, diphtheroids, and many other organisms being described as the causal agents of colds. A further complicating factor was introduced in 1921 as the result of the observations of Olitsky and Gates⁴² that a hitherto unrecognized filter-passing anaërobic flora existed in the rhinopharynx, thus offering new possibilities in the search for the etiological agent in colds.

There were, however, certain objections to ascribing causal significance to any one or a combination of these organisms. In the first place, there was no convincing evidence that any of these organisms were universally associated with colds and as Bloomfield² pointed out in 1921 "cultural studies . . . fail to show in uncomplicated cases any variation in the flora which would enable one to select any organisms or group of organisms as the cause of colds." This interpretation of the observed facts was later concurred in by Dochez and his associates⁴⁹ and by ourselves.³⁶ It has also been shown by Mills, Shibley and Dochez³⁹ and by ourselves³³ that there is little evidence that the

filter-passing anaërobic play a causal role in the production of colds.

This failure to produce satisfactory evidence of the etiological role of a bacterial agent in colds has led investigators to search for a filtrable agent in upper respiratory tract infection. In 1914 Kruse³⁰ reported that he had produced colds in human volunteers by intranasal inoculations with Berkefeld filtrates of the nasal secretions from individuals ill with natural colds. The nasal secretions were diluted in fifteen volumes of physiological salt solution and filtered through a small Berkefeld candle. A few drops of this filtrate were instilled into the nostrils of twelve volunteers. After an incubation period of from one to three days, four of the twelve developed colds. Later in the same year the experiment was repeated and of the thirty-six persons who were inoculated, fifteen developed colds with an incubation period varying from one to four days. In both instances it was not possible to demonstrate bacteria in the filtrates by means of aerobic or anaërobic culture methods. These results led Kruse to conclude that the infectious agent of colds was a filtrable virus and to this virus he gave the name—*Aphanozoum coryze*.

A short time after Kruse's note appeared, Foster¹³ in a careful study confirmed and extended Kruse's observation. Foster obtained the nasal secretions from early acute colds and after diluting and shaking them in salt solution, the mixture was filtered through a tested Berkefeld N candle. Seven of the ten healthy young men inoculated intranasally with a few drops of the filtrate developed typical colds within forty-eight hours. Human blood-agar plates prepared from the filtrates and incubated at 37° C., under both aerobic and anaërobic conditions, remained sterile at the end of seven days. However, in anaërobic cultures prepared according to the Smith-Noguchi technic, minute spherical bodies were observed which were considered to be organisms and which in the first subculture generation proved infective, producing colds in ten out of eleven inoculated volunteers. In conclusion, Foster stated that he believed that the infectious agent of the common cold was a filtrable virus and that by utilizing a specialized culture medium, he was able to cultivate, from filtrates containing active virus, a peculiar minute filter-passing microorganism which had a direct causal relation to colds.

In 1917 Dold⁴⁰ reported that he had been able to transmit an upper respiratory infection to human volunteers by means of a bacteria-free Berkefeld filtrate of the nasal secretions obtained from an individual ill with a natural "cold." The nasal secretions were diluted in fifteen volumes of physiological saline and then filtered through a Berkefeld candle under negative pressure. In the first group of experiments seventeen volunteers were inoculated with the Berkefeld filtrate. Fifteen students who worked, ate and slept in the same rooms with the volunteers served as controls. Seven of the inoculated volunteers (41 per cent) developed typical "colds" within seventy-two hours. None of the controls developed the affection during the period of observation. In a second experiment forty patients on the surgical wards were inoculated with a Berkefeld filtrate of the diluted nasal secretions from an individual ill with a "cold." The results were essentially negative as only one developed an upper respiratory infection. The filtrates were cultured in serum agar, ascitic agar and in ascitic broth under both aerobic and anaerobic conditions. Special cultures were made in a modified Smith-Noguchi medium in which ascitic broth replaced the usual ascitic fluid. The cultural results were negative in all instances. Diluted material from a 48-hour Smith-Noguchi culture of the filtrate of nasal secretions obtained from a volunteer in the first group who developed a "cold" subsequent to inoculation, was used in the third experiment. Two of these volunteers inoculated with this material developed mild upper respiratory symptoms which endured four or five days. The culture from which this material was obtained was considered to be free of bacteria. In this paper experimental observations are also reported to the effect that irritating substances (insect powder) can, when inhaled, produce the symptoms and signs of an acute infectious "cold."

During the influenza epidemics of 1919 and 1920, Schmidt⁴⁸ inoculated one hundred and ninety-six persons with Berkefeld filtrates of nasal secretions from colds and eighty-four individuals with Berkefeld filtrates of the respiratory tract secretions from individuals ill with "grippe." In the first group, twenty-one developed colds and three developed grippe; while in the second group, five developed grippe and four colds. Of forty-three controls who had been inocu-

lated with sterile physiological salt solutions eight developed colds. No information is given in this report as to the exact size of the Berkefeld filter or to the period in the disease when the secretions were collected. Schmidt, in concluding his report, expresses the belief that more human beings must be inoculated before the true nature of the infectious agent is determined.

Shortly after this communication appeared, Williams, Nevens and Gurley⁵⁷ reported that they had been unable to infect forty-five volunteers with Berkefeld N filtrates of the nasopharyngeal washings from seven early "cold" cases and three typical influenza cases.

During investigations concerning the etiology of influenza, Olitsky and McCartney⁴⁸ studied the filtered nasopharyngeal secretions of numerous individuals ill with "colds." They were unable to produce any characteristic lesions in rabbits, by intratracheal inoculation with Berkefeld V or N filtrates of the nasopharyngeal washings from these subjects. However, they were able to cultivate several groups of minute anaerobic Gram-negative organisms from some of these filtrates. In their opinion, none of these minute organisms was constant enough to be considered the incitant of the affection. By using as the inoculum, filtered nasopharyngeal secretions from early cases of typical infections, they were able to transmit singly and in series upper respiratory infections to human volunteers, thus demonstrating that the incitant was a filtrable agent.

Robertson and Groves⁴⁶ collected the nasal secretions of persons ill with uncomplicated coryza from six to 144 hours after the onset of the infection. After diluting these secretions with sterile salt solution, the mixtures were filtered through Berkefeld candles. The filtrates were cultured upon aerobic and in anaerobic media and in every instance the cultures remained sterile. Smears from the filtrates invariably showed coccoid bodies similar to those described by Foster. No significance was attached to these findings since the same bodies could be demonstrated in filtrates of the nasal washings from normal persons. "Inoculations with the filtrates were made into the nostrils of volunteers as soon after filtration as possible. In no case did this time exceed twenty-four hours after the collection of the secretions, which in the meantime were kept

in the ice-box." One hundred human volunteers were inoculated with the various filtrates and five of them developed upper respiratory infections following the inoculations. Because of the small number of positive results, these observers considered them to be the result of causes entirely independent of the inoculations, and concluded that their experiments presented no convincing evidence indicative of a filtrable agent as being the exciting factor in acute coryza.

In 1929, Dochez, Shibley and Mills⁸ reported that in the course of their investigation on human upper respiratory infections, they were able to produce in apes, by means of inoculations with Berkefeld V filtrates of the nasopharyngeal washings from individuals ill with "colds," a condition which bore a striking resemblance to the human disease. In this communication they stated that as yet the active filtrable agent was unknown, but that from the filtrate in all positive experiments a Gram-negative anaerobic bacillus of the type described by Olitsky and Gates had been cultivated. In a further report⁵⁰ they stated that they had been unable to infect apes with the filtrates of nasopharyngeal washings from normal individuals, notwithstanding the fact that from 75 per cent of these filtrates they cultivated Gram-negative anaerobes. These findings led them to believe that the type of upper respiratory infection under consideration was caused by a filtrable virus.

In two subsequent reports Dochez and his associates^{9, 51} describe the results of their transmission experiments in apes and in human beings. Of twenty-eight ape experiments concerned directly with the testing of the hypothesis that colds may be caused by filtrable agents, washings from individuals with colds were used in twenty instances and normal washings in eight. Four animals in the first group were excluded for statistical purposes. Seven of sixteen animals contracted colds subsequent to inoculation with filtered nasal washings from individuals ill with natural colds. In the group of eight animals inoculated with filtrates of nasal washings from normals, none developed colds, although 75 per cent of these filtrates contained Gram-negative filter-passing microorganisms. Several miscellaneous experiments were performed including two successful ape to ape transmissions in which filtered ape washings were used and two unsuccessful experiments in which an attempt

was made to transfer colds by means of living cultures of the filter-passing anaerobes obtained from a filtrate which had been used in a successful transmission experiment. In the course of their experimental transmission tests in apes several positive results were obtained with filtrates in which the filter-passing anaerobes were absent, thus substantiating their view that the filter-passing anaerobes were not the primary etiological agents in the production of "colds."

The human transmission tests were carried out under a most rigorous system of quarantine in which every precaution was taken to protect the subjects from direct or indirect contact with natural colds. Nine completed experiments are reported in which transmission was attempted by means of filtered nasal washings and of these four were successful. As a result of their experimental observations these investigators conclude that "the contagious cold in human beings is caused by an invisible, uncultivable, filtrable agent which in all likelihood belongs to the group of so-called submicroscopic virus."

In the months of June and July, we³² undertook certain experiments designed to test the validity of the hypothesis that a filtrable agent was of etiological significance in the production of colds. Intelligent college girls were used as experimental subjects. These girls were placed in as rigid, individual isolation as could be devised. After five day control periods the volunteers were inoculated with bacteria-free filtrates of the rhinopharyngeal washings obtained from individuals ill with typical colds. We were able to transmit to these volunteers, both singly and in series, through two and four passages, upper respiratory tract infections which did not differ from natural common colds. In all, nine out of fifteen inoculated individuals developed colds. The presence and type of infection was confirmed in each instance by three independent observers. Thus, a further confirmation of Kruse's original observation was established.

The next contribution to our knowledge of this filtrable agent in colds was made by Dochez and his associates⁷ when they announced that they had been able to propagate this agent in a tissue medium and that remote generations of such a culture were capable of producing colds in inoculated human subjects. This observation was quickly confirmed by Powell and Clowes.⁴⁵

Thus it seemed rather clear until the spring of 1934 that a filtrable agent was the primary cause of colds. At that time Kerr and Lagen²⁹ reported that under controlled conditions of environment, in air-conditioned rooms, they were unable to transmit colds to presumably susceptible subjects either by exposure or by direct inoculation. In their conclusions they suggested that in a controlled environment the common cold is not transmissible. It is impossible at the present time to evaluate these preliminary observations, but if they are confirmed the possibility of employing air-conditioning in the prophylaxis of colds is of greatest importance.

EPIDEMIOLOGY

It seems quite definite that common colds are infectious, but that they are also contagious is still a matter of dispute because many observers believe that waves of upper respiratory tract infection can be correlated with changes in climatic conditions. On the basis of observations made in Holland, Van Loghem³¹ holds that the primary predisposing factor to the infection lies in disturbances of the air temperature and feels that he has been able to establish a direct relationship between falling air temperature and peaks of respiratory disease. He further interprets the apparent synchronism of peaks in different parts of Holland as evidence against the contagiousness of colds and finally he points out that the average number of colds per reporting individual varied little and that the average number of cases was the same in small families as in large families, which he believes would not occur if colds were contagious.

Opposed to these views are those held by various investigators in this country. Gafafer¹⁶ has shown in Baltimore during the October-April period that there is no association between the measurable elements of the weather and the upper respiratory attack rate. Gover and her associates²¹ "find no definite association of respiratory attack rates with marked variations in climate as represented by six American cities with wide geographic and climatic variations." These six cities were Boston, Washington, Columbus, Ohio, Chicago, New Orleans and San Francisco. Earlier studies upon the same material^{14, 56} showed that the peaks of upper respiratory tract infection occurred almost simultaneously in these six cities.

These observations in such widely differing localities, as far as climate was concerned, are opposed to Van Loghem's theory that falling air temperature can be correlated with waves of upper respiratory tract infection. Then, too, the synchronism of the peaks of pandemic influenza in these cities in 1918 renders Van Loghem's interpretation in regard to the influence of climate untenable.

Despite objections to the contrary, the common cold is generally considered to be contagious and this opinion seems to be supported by the accumulated evidence of clinical experience and laboratory observation.

The most common source of the contagion is contact with an infected individual. This is generally direct. It is probable that colds are most contagious during the early stages of the infection and recently we³⁴ have shown that an individual may spread the infection during the incubation period of a common cold. It has also been shown¹ that food handlers suffering from colds may contaminate food and in this manner transmit the infection to another person.

The factor or factors which determine whether or not an individual contracts a cold following a definite exposure are unknown. Gafafer and Doull²⁰ have pointed out in a very careful study that stability of resistance or susceptibility to colds is not a characteristic of mankind. Their continuous observation made upon a group of 111 volunteers over a period of three years show that individuals tend to have the same number of colds for two successive years but that otherwise colds seem to be distributed by chance and that "the trend, in general, of the average number of colds reported by those suffering few or many colds when projected into the future or back into the past is towards the average or mean reported by the entire population.

As far as it is known¹⁷ there is no racial susceptibility to colds and there is no evidence that a catarrhal diathesis exists. While it is widely believed that upper respiratory tract infection is more frequent and severe in individuals possessing abnormalities of the upper respiratory tract, Doull and his associates¹¹ found in a study of groups comprised of 462 and 601 individuals (one-quarter of which were children) that "Taken as a group, individuals exhibiting one or more abnormalities were found not to suffer a greater frequency of attack than

normals. . . . With regard to the relative severity of the attack in normals and abnormals, respectively, it was found that . . . attacks among the abnormals were of approximately the same severity as those among normals. . . . Among children, the average duration of attack was longer for those with each class of defect than for those who were recorded as normal." Gafafer¹⁸ has further shown that in so far as adults are concerned individuals without tonsils and adenoids have the same frequency, severity and type of upper respiratory tract infection as those with tonsils and adenoids.

The mean attack rate for colds as determined from a two years study in Baltimore⁵⁷ is three colds per person per year. The highest attack rate existed in children between the ages of one and four years. From this period the attack rate declined until the age of nineteen years was reached. Following this age group a rise in the attack rate occurred until a secondary peak was reached in the twenty-five to thirty-five year age group. Then a general decline in the attack rate was found throughout the remaining decades of life. No marked difference was found in the attack rate between males and females. A seasonal picture of high incidence in the fall and winter months with minimum rates in June and July was found to exist. From early autumn and through the winter the attack rate while generally above the yearly mean was found to be highly variable, thus indicating that a series of epidemics occurred which were irregular in spacing and magnitude.

It is known that the common cold exists throughout the civilized world. Remote, isolated communities are, however, quite free from this type of disease. Gafafer¹⁵ has recently reprinted the following paragraph from Rev. Kenneth MacCaulay's eighteenth century "History of Saint Kilda": "Another very remarkable disease that attacks this place occasionally is a severe cold, sometimes attended with spitting of bloody viscous matter, every time the Harris people come among them or strangers from other quarters." Saint Kilda is a small, isolated island well off the western coast of Scotland, which is sparsely populated and rarely visited. It is of greatest interest to find this early observation upon the relation of contact with the outside world to the development of upper respira-

tory tract infection in isolated communities.

It has also long been recognized that in groups of isolated individuals such as Arctic explorers, common colds tend to disappear after contact with civilization has been severed. Nansen has described how he and his men never developed "colds" although their clothes, saturated with perspiration, froze into a solid mass of ice during the day, and at night gradually thawed, thus chilling the explorers to the bone. All members of this expedition were without upper respiratory tract infection in the Arctic regions but all caught "colds" when they reached Norway. Shackleton recorded similar experiences in regard to "colds" in the Antarctic, with the exception that his men developed colds upon opening bales of clothes packed in London.

Under ordinary conditions Eskimos are not subject to upper respiratory tract infections although they are exposed to the rigors of an Arctic existence. However, in 1928, Heinbecker and Jones²⁴ observed during a trip up the west coast of Greenland that the communities of Arctic Eskimos with which their ship came in contact, all developed upper respiratory tract infections within 48 to 72 hours after the contact had been effected. They also noted that the basal, rhinopharyngeal bacterial flora in these isolated Eskimos was, to all intents, identical with that found in crowded civilized communities.

Recently Smillie and his associates^{3, 38, 44, 54} have conducted extensive etiological and epidemiological studies upon upper respiratory tract infection in such widely separated and isolated communities as Andalusia, Alabama, St. Johns in the Virgin Islands, Northwest River, Labrador and upon the island of Spitzbergen off the North Coast of Norway. Their observations are of great interest in that they found very little variation in the normal bacterial flora of the throat in these widely separated places. They noted that in Alabama, epidemics of colds were associated with a rise in the pneumococci, while in Labrador influenza bacilli became prominent during an epidemic of respiratory tract infection. In St. Johns and in Spitzbergen no particular organisms became predominant during waves of colds. In St. Johns, the colds were mild and in Alabama and in Labrador fairly severe. In Spitzbergen upper respiratory tract infection tended to disappear after the island became ice-locked and contact with the outside

world ceased. In the spring, however, when the ice went out and the first ship arrived, a veritable explosion of upper respiratory tract infection occurred in the resident population and within a month seventy-five per cent of the people suffered from colds. Although many of the colds were severe, no changes in the bacterial flora in the throats of the affected individuals could be demonstrated.

PATHOLOGY

There are very few observations concerning the histopathology of colds. In 1885 MacKenzie³⁷ first described the histological appearance of the nasal mucous membranes during acute coryza. He found an intense engorgement of the cavernous tissue which was especially well marked over the lower halves of the middle and posterior portions of the inferior turbinates with rupture of the vessels. Along the inner walls of the dilated spaces were congregations of lymphoid cells and in some of them collections of fibrinous exudate. A moderate cellular infiltration was present below the basement membrane.

Forty-five years after this report, Hilding²⁵ published his observations upon the histopathology of the nasal mucous membranes in "colds." He found that "the pathologic process is that of a mucous membrane inflammation showing rather marked tissue changes, including the loss of many of the surface cells and a proliferative reaction in the submucosa. The epithelium is regenerated and repaired by the growth and multiplication of the stellate cells normally found deep in the epithelium."

While studying the nasal secretions, Hilding noted that the cellular content changed rapidly. Early in colds the secretion was watery and contained few cells. Ciliated epithelial cells appeared during the first twenty-four hours and became more numerous by the second day. The deeper epithelial cells, polyblasts and polymorphonuclear cells appeared in the secretions on the second day and rapidly became numerous. Within a few days the polymorphonuclears made up most of the cellular content of the secretions.

Hilding did not believe that the cellular content of the secretions or the pathological picture in the nasal mucous membranes was related to any one causal agent in colds, but interpreted the observed changes as a re-

sponse to any one of or a combination of etiological factors.

Recently we³⁵ have reported upon the changes observed in the cellular constituents of the nasal secretions in the various stages of colds. Two main types of cellular response were found. In the first type the monocytes and epithelial cells predominated during the early stages of the cold, and in the second type polymorphonuclear neutrophilic leukocytes. Gradations between these two types commonly occurred. In the later stages of colds the polymorphonuclear neutrophilic leukocytes were predominant. Further studies upon the nasal secretions have demonstrated that these cellular changes occur without reference to the presence or absence of bacteria in the nasal secretions. These observations have led us to believe that it may be possible in uncomplicated colds to have the entire symptomatology generated by the virus infection without participation of the so-called secondary invaders.

CLINICAL SIGNS AND SYMPTOMS

Colds are protean in nature and in the course of an epidemic of upper respiratory tract infection many variations from the prevailing type of disease are encountered. However, the studies of Doull and his associates,¹¹ and those of Van Volkenburgh and Frost,⁵⁷ upon more than 2,000 cases of colds occurring in Baltimore during 1929-30, have made it possible to ascertain the frequency of certain signs and symptoms and to outline the general clinical course of upper respiratory tract infections.

The incubation period of a cold is from one to three days and the onset is more frequently sudden than gradual. Aching either localized or general occurs in about one-quarter of affected individuals. The throat is generally sore (although frequently little can be seen objectively) and headache is common. Nasal discharge occurs in nine out of ten individuals ill with upper respiratory tract infection and about three-fourths of the patients develop a cough during the course of their infection. One-fourth of the affected persons take to their beds at some period of their colds. Fever occurs in one-quarter of the cases. In general, the leukocyte count is normal although a leukocytosis or a leukopenia may occur. Labial herpes (cold sores) occur in but 1 per cent

of the cases. The mean duration of a cold is about fifteen days and from 10 per cent to 12 per cent of the attacks are accompanied by one or more complications. There is little evidence that an immunity is established after a cold.

TREATMENT

There is no specific remedy for the treatment of colds. Our observations have led us to believe that the only rational treatment for this malady is for the infected individual to be put to bed at the onset of the infection and to remain there for two or three days. Diet has little effect in the treatment of colds but it is wise to force fluids moderately. A mild laxative is of value if constipation exists and it is a good plan to treat the distressing features of the disease symptomatically. If such a regime is followed, many infections will be aborted, many complications averted and many contact infections avoided.

Colds are, however, generally regarded as necessary evils and one cannot prevail upon patients to follow the above regime, so therefore one must attempt other methods of therapy. Recently Diehl⁶ has reported that from 74 per cent to 78 per cent of his patients believed that they had been greatly benefited by the administration of papaverine and codeine or dilaudid and papaverine during their colds. We have had no experience with this type of treatment but Diehl suggests "that it may be possible with codeine and papaverine to reduce very materially the time lost as a result of colds."

PROPHYLAXIS

The multiplicity of the measures designed to prevent colds attests to their lack of reliability. At the present time "hardening" exercises, vitamin feeding, ultra-violet light therapy, and bacterial vaccines, occupy the first rank of popularity as prophylactic measures designed to protect one against colds.

Hardening exercises are thought by many to increase one's resistance to colds. When, however, the relation of the hardness of individuals is correlated with their resistance to upper respiratory tract infection it is found that the degree of hardness or softness of an individual has nothing to do with susceptibility to colds.¹⁹

The extension of our knowledge concerning the vitamins, especially vitamin "A" and

vitamin "D" gave rise to the hope that in these accessory food factors a sovereign remedy would be found for the prevention of colds. Carefully controlled observations upon the use of these agents are, however, disappointing and in a recent report, Clausen⁴ has suggested that too much vitamin "A" may predispose a child to respiratory tract infection. The very careful clinical studies of Colebrook⁵ in England and of Doull and his associates¹² in this country have quite definitely demonstrated that irradiation with ultra-violet light does not reduce the incidence of upper respiratory tract infections, nor does it decrease the duration or severity of such diseases. The failure of vitamin therapy as a prophylactic measure in colds can be understood if one bears in mind that in general our national dietary is not lacking in these essential substances.

The introduction of bacterial vaccines as prophylactic agents in the prevention of cold was greeted with widespread enthusiasm. Early reports seemed to show that the incidence, severity and duration of upper respiratory tract infection were materially lessened in inoculated subjects. During the past fifteen years, however, carefully controlled studies^{28, 52} have demonstrated that there is but little basis for the claims of the enthusiastic exponents of bacterial vaccines. The reason for the failure of bacterial vaccines in the prophylaxis of colds can be explained upon the basis that the ordinary bacteria of the rhinopharynx have nothing to do with the initiation of the primary upper respiratory tract infection known as the common cold. That these vaccines have little effect in reducing the severity or duration of the infection can be understood if it is remembered that in man there is little evidence of pathogenic activity by the so-called secondary invaders in uncomplicated common colds.

In concluding we may say that at the present time the only prophylaxis against colds is the avoidance of contact with infected individuals. There is no other method.

BIBLIOGRAPHY

1. Bliss, E. A., and Long, P. H.: *Proc. Soc. Biol. and Med.*, 31:31, 1933.
2. Bloomfield, A. L.: *Bull. Johns Hopkins Hosp.*, 32:10, 33, 121 and 290, 1921.
3. Burky, E. L., and Smillie, W. G.: *J. Exp. Med.*, 50:643, 1929; Smillie, W. G., *Porto Rico J. Pub. Health and Trop. Med.*, 5:3, 1929.
4. Clausen, S. W., and McCoord, A. B.: *J. A. M. A.*, 101:1384, 1933.

5. Colebrook, D.: Med. Res. Council, Spec. Rep., 131, 1929.

6. Diehl, H. S.: J. A. M. A., 101:2042, 1933.

7. Dochez, A. R., Mills, K. C., and Kneeland, Y., Jr.: Proc. Soc. Exp. Biol. and Med., 28:513, 1931.

8. Dochez, A. R.; Shibley, G. S., and Mills, K. C.: Proc. Soc. Exp. Biol. and Med., 26:562, 1929.

9. Dochez, A. R., Shibley, G. S., and Mills, K. C.: J. Exp. Med., 52:701, 1930.

10. Dold, H.: Münch. med. Woch., 64:143, 1917.

11. Doull, J. A., Van Volkenburgh, V., Herman, N. B., and Gafafer, W. M.: Amer. J. Hyg., 17:743, 1933.

12. Doull, J. A., et al.: Am. J. Hyg., 13:460, 1931.

13. Foster, J. B., Jr.: J. Am. Med. Assn., 66:1180, 1916; J. Infect. Dis., 21:451, 1917.

14. Frost, W. H., and Gover, M.: Pub. Health Reports, U. S. P. H. S., 47:815, 1932.

15. Gafafer, W. M.: Human Biol., 3:437, 1931.

16. Gafafer, W. M.: Am. J. Hyg., 13:771, 1931.

17. Gafafer, W. M.: Human Biol., 4:429, 1932.

18. Gafafer, W. M.: Human Biol., 4:429, 1932.

19. Gafafer, W. M.: Amer. J. Hyg., 16:233, 1932.

20. Gafafer, W. M., and Doull, J. A.: Amer. J. Hyg., 18:712, 1933.

21. Gover, M., Reed, L. J., and Collins, S. D.: Pub. Health Reports, U. S. P. H. S., 49:811, 1934.

22. Greenburg, L.: Yale J. Biol. and Med., 3:341, 1931.

23. Hayes, Thomas: Quoted by Bloomfield, Bull. Johns Hopkins Hosp., 32:123, 1921.

24. Heinbecker, P., and Irvine-Jones, E. I. M.: J. Immunol., 15:395, 1925.

25. Hilding, A.: Arch. Otolaryng., 12:33, 1930.

26. Hill, Leonard, and Clement, M.: Common Colds, London, 1929, William Heinemann (Medical Books) Ltd., 99 Great Russell Street, W. C. 1.

27. Hüter: (1873) Quoted by Benham (1906).

28. Jordau, E. O., and Sharp, W. B.: J. Infect. Dis., 28:357, 1921.

29. Kerr, W. J., and Lagen, J. B.: Proc. Soc. Exp. Biol. and Med., 31:713, 1934.

30. Kruse, W.: Münch. Med. Woch., 61:1547, 1914.

31. Loghem, J. J. van: J. Hyg., 28:33, 1928.

32. Long, P. H., and Doull, J. A.: Proc. Soc. Exp. Biol. and Med., 28:53, 1930.

33. Long, P. H., and Muellerschoen, B.: J. Inf. Dis., 52:121, 1933.

34. Long, P. H., Bliss, E. A., Carpenter, H. M.: Bull. Johns Hopkins Hosp., 51:278, 1932.

35. Long, P. H., Bliss, E. A., and Carpenter, H. M.: J. Clin. Invest., 12:1127, 1933.

36. Long, P. H., Doull, J. A., Bour, J. M., and McComb, E.: J. Exp. Med., 53:447, 1931.

37. MacKenzie, J. N.: N. Y. State J. Med., 42:212, 1885.

38. Milam, D. F., and Smillie, W. G.: J. Exp. Med., 53:733, 1931.

39. Mills, K. C., Shibley, G. S., and Dochez, A. R.: J. Exp. Med., 47:193, 1928.

40. Mudd, S., and Grant, S. B.: J. Med. Res., 40:53, 1919.

41. Mudd, S., Goldman, A., and Grant, S. B.: J. Exp. Med., 34:11, 1921.

42. Olitsky, P. K., and Gates, F. L.: J. Exp. Med., 33:125, 361, 373 and 713, 1921.

43. Olitsky, P. K., and McCartney, J. E.: J. Exp. Med., 33:427, 1923.

44. Paul, J. H., and Freese, H. L.: Amer. J. Hyg., 17:517, 1933.

45. Powell, H. M., and Clowes, G. H. A.: Proc. Soc. Exp. Biol. and Med., 29:332, 1931.

46. Robertson, R. C., and Groves, R. L.: J. Infect. Dis., 34:400, 1924.

47. Schade, H.: Ztschr. ges. exp. Med., 7:355, 1918-19.

48. Schmidt, P.: Deutsch. med. Woch., 46:1181, 1920.

49. Shibley, G. S., Hanger, F. M., and Dochez, A. R.: J. Exp. Med., 43:415, 1926.

50. Shibley, G. S., Mills, K. C., and Dochez, A. R.: Proc. Soc. Exp. Biol. and Med., 27:59, 1929.

51. Shibley, G. S., Mills, K. C., and Docher, A. R.: J. Am. Med. Assn., 95:1553, 1930.

52. Sholly, von, A., and Park, W. H.: J. Immunol., 6:103, 1921.

53. Smillie, W. G.: Personal communication.

54. Smillie, W. G.: Amer. J. Hyg., 11:392, 1930.

55. Tschalusow, M. A.: Arch. f. d. ges. Physiol., 151:540, 1913.

56. Townsend, J. G., and Sydenstricker, E.: Pub. Health Reports, U. S. P. H. S., 42:99, 1927.

57. Van Volkenburgh, V., and Frost, W. H.: Amer. J. Hyg., 17:122, 1933.

58. Williams, A. W.; Nevens, M., and Gurley, C. R.: J. Immunol., 6:5, 1921.

59. Winslow, C. E. A., and Greenburg, L.: Amer. J. Hyg., 15:1, 1932.

EDEMA AND WATER BALANCE*

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It is generally evident that neither the external phase of water balance, represented by excretion—anuria, diuresis, and their variations—nor the internal phase—chiefly edema and dehydration—are to any great degree dependent upon ability of the kidneys to excrete water, but parallel much more closely the state of the protoplasm, represented by cellular activity, electrolyte distribution, metabolic disturbances, and activities of various glands of internal secretion.

In particular I propose to deal with the tissue element in conditions such as edema, especially of Bright's Disease, and to submit for your consideration the point of

view which, as the essence of extra-renal theories, directs attention to the activities and functions of a single cell as a representative of the tissue phase.

We have largely abandoned the gross pathologic viewpoint, which for generations overshadowed other methods of investiga-

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tion. Consider how many of us acquired a thorough understanding of pneumonia through discussion of gray and red hepatization, or of nephritis as represented by small red or large white kidneys, in contrast to the present immunological and functional trends.

Progress in medical sciences is now to be achieved by greater understanding of pathological physiology, with the application of physical chemistry and by investigation and understanding of the behavior of a single cell. For example, if one asks concerning the mechanism of infectious disease and the damage to various organs—such as follows diphtheria or streptococcus infection—it is quite simple to reply that the offending organism elaborates a soluble toxin which is carried in the circulation to the central nervous system, or liver, or kidneys, and there, in intimate contact with the cells, is able to exert its toxic action and produce the damage. However, the question is far from being answered. What does the toxin do to a cell? How does it cause this injury? What functions of the cell are thus destroyed? Since we do not know, as yet, much regarding such individual functions and are rarely able to measure them quantitatively, the difficulty in estimating variations from normal can be readily understood. We must rely upon results obtained from large aggregates of cells, from which we may individualize to a limited extent.

Edema is thus not a result of failure or inability of kidneys to excrete water, but is primarily an increased tissue or cellular avidity for water with, at times, a contributing element in inability of the blood and vessels to retain fluid, and rapid and extreme fluctuations in water balance represent, not improvement or aggravation of renal function, but changes in the colloidal state of the cells, reflected in changing tissue thirst. It is true that in extensive edema only a small portion of the fluid is within the cells. The largest part, the intercellular tissue fluid, has accumulated in the spaces in osmotic equilibrium with the cellular fluid and, therefore, while not strictly a cellular edema, is dependent upon changes in cell chemistry.

From a clinical and etiological standpoint, the major causes of the constitutional changes producing edema are:

1. *Infection.*—The final mechanism, as previously indicated, is obscure, but it is probable that interference with the oxida-

tion within the cell, by the toxins depressing or destroying certain catalytic substances or oxydases, is the basis for this effect. In the edemas of acute Bright's Disease, whether following specific infections such as scarlet fever, or the more general type, as in influenza or colds, or as persisting foci, the principal search and greatest promise of relief come in ascertaining and overcoming the source of infection.

2. *Lack of oxidation due to mechanical causes.*—Primarily, this is seen in obstruction of venous flow due to right heart failure; that is, congestive heart disease. Again it is important to emphasize that edema in venous stasis is due to the oxidative failure and not to the increased venous pressure, as in a standpipe. Edema from localized mechanical obstruction, such as injury to vessels, obstruction to return flow from scars, external pressure, and from the stasis of varicose veins, is in its mechanism no different from the more general type. Furthermore, the allergic reactions such as urticaria follow irritation of the blood vessels, resulting in vascular spasm and inadequate nutritional and oxygen supply. It is evident that anoxemia is not the sole result of either circulatory stasis or of ischemia. While the supplying of oxygen to the cells is important, it is second only to supplying nourishment and to deportation of CO_2 and accumulated products of metabolism, and to a great degree the edema is caused by the total of all these factors.

Also to a degree the clinical syndrome of nephrosis, if it is a pure type, or the nephrotic type of Bright's Disease, falls within this classification, for in many instances the administration of glucose and insulin is sufficient to markedly influence this condition.

3. *Lack of oxidation due to metabolic deficiencies.*—In this instance, myxedema is the outstanding example and the type of edema is of no great importance in this discussion. However, it is of significance when the metabolic depression of hypothyroidism is superimposed upon one of the other causes of edema, such as the nephrotic type, and may be an unrecognized source of persistent edema in such cases.

4. *Electrolytic or mineral balance.*—While in many respects the most complex, the factor of mineral balance is probably the most easily and successfully manipulated,

but largely on an empirical basis. Fundamentally two groups of basic cations—calcium and potassium as opposed to sodium—are directly antagonistic regarding edema, or tissue thirst. Sodium, not chloride, is preëminently the salt causing edema, while calcium and, to a lesser degree, potassium exert their influence by dehydrating tissues. When present in proportions encountered in normal protoplasm, there is a wide margin of water balance, so that water and water-soluble substances may move freely in either direction with respect to cell membranes and to tissue and blood. With an excess of sodium over this proportion, the cell becomes hydrophilic, increasing its water content at the expense of other sources—both free water of the blood, and fluid from tissue spaces. Later, with this water valence satisfied, the fluid in the tissue spaces increases at the expense of blood water until the cell-tissue space equilibrium is established. Meanwhile there is decreased urinary output due simply to the diminished free water available in the blood. Conversely, excess of calcium decreases water content of cell, reflected in lessened intercellular water with consequent increased blood water and diuresis, all this independent of renal changes.

It is also true that chloride balance parallels water balance and this fact has furnished a ground for much discussion. For nearly twenty years blood chlorides have been diligently determined and arguments regarding chloride retention are still heard in many fields. The estimation of chloride is extremely simple; that of sodium extraordinarily arduous and unreliable. My feeling in the matter is that to a large degree we have been determining sodium effects by chloride determinations. Since the two are practically inseparable, the results are empirically justified, but are not correct. For the opposition, however, it must be admitted that potassium, which in cases of long standing congestive heart disease is very effective in reducing edema when administered as the chloride, appears to be even more so when given as the acetate or citrate, eliminating altogether the chloride.

These factors can frequently be utilized to advantage clinically. In cases of renal insufficiency, particularly without edema and with increased concentration of metabolites in the tissues, as reflected by blood chemis-

try, a washing out process may be accomplished by administration of sodium chloride and Ringer's solution by mouth and intravenously until massive generalized edema results, after which a salt-free diet, together with glucose (either subcutaneously or intravenously) and ammonium nitrate to the point of definite acidosis will result in a surprising degree of diuresis, in addition to which enormous ascites appear, which fluid, with a concentration of metabolites approximately that of the blood, may be withdrawn, thus accomplishing to some extent the work which the kidneys are incapable of performing. This process may be repeated indefinitely and in some cases seems to have prolonged for many months the life in extreme renal insufficiency.

5. *Endocrine*.—Less well understood, but of increasing interest, are the influences on water balance of certain endocrine glands, notably the pituitary. The anti-diuretic effect of posterior pituitary, as exhibited in diabetes insipidus, is well known, and recently I have reported a group of interesting but obscure cases of menstrual edema, in which subjects regularly developed generalized, massive edema, with gain in weight up to fourteen pounds for the two or three days of the menstrual period, and responding in a most surprising manner to the administration, not of anterior pituitary extract, but of the so-called anterior pituitary-like substance, or prolactin, obtained from urine of pregnant women, and now supposed to be a product of placental or syncytial tissue.

6. *Serum proteins*.—Reduction of serum protein, especially albumin, to certain critical levels has been presumed by some to be a primary cause of edema. It is true that experimentally, by plasmapheresis, edema appears in dogs when these levels are reached, but clinically such wide fluctuations in water balance occur without appreciable variation in serum protein that this theory must be relegated to a minor position, since the osmotic pressure exerted by the protein has been shown to be almost negligible. Recently a case of nephrosis, in as pure form as can be seen, after being two months in Cook County Hospital on a supposedly salt-free diet, was transferred to a research bed at Presbyterian Hospital. In spite of a total serum protein of 0.37 gm. per 100 c.c., about one-twentieth of normal, and the lowest to

come within my observation, he lost fifty pounds in fifteen days, without medication of any sort, on a diet that was absolutely salt-free. During this fifteen day period there was no change in his serum protein. This and other less striking instances convince me that the level of blood proteins is not of primary importance in the production of edema.

The edemas of starvation and nutritional deficiency have been placed in this class of protein deficiency, but critical analysis usually shows a generalized tissue or metabolic disturbance, frequently simulating hypothyroidism, and the high protein diet found to be so effective acts in all probability more through its specific dynamic action than by its effect in increasing serum protein.

7. *Extremes of temperature.*—While excessive heat is generally recognized as a cause of edema, not only in precipitating acute attacks in nephritis, but in the well known swelling of feet in hot weather, chilling is a much more important factor, and, almost without exception, this has been found to precede either original appearance or recurrences in the cases of nephrosis which our group has investigated.

Edema as such is in most cases a distinct asset to the individual, and it becomes necessary to distinguish between the unfavorable, morbid process of which it is a reflection, and the fact that the edema is diluting the toxins within the tissues, holding them to some extent in solution and protecting the cells from a greater degree of damage. Edema as such should not be reduced any more than fever should, both being protective, and accessories to the process of recovery. Especially significant is the word of Dr. Aldrich on the nephritic service of the Children's Memorial Hospital, Chicago. After years of observation in cases of acute tubular nephritis with edema, having a distressingly high mortality on the conventional treatment requiring restriction of fluids, he began to push fluids in all such cases, with the result that, in the last three years, there have been no deaths from this cause alone. Similarly in adults, aggravation of toxic symptoms will follow restriction of fluids in all but a few cases, and, where the infectious or toxic source persists, fluids should be administered in large quantities and by all routes necessary to insure the tissue demand being satisfied.

The contra-indications to the generous use

of water in edema are cardiac decompensation, cerebral edema (since the increased intracranial pressure more than outweighs the toxin diluting factor), and the appearance of ascites, or polyserous effusion. In this latter situation the use of McClure and Aldrich's skin absorption test is of tremendous value. Frequently, as edema begins to subside there is a massive accumulation of fluid in the peritoneal pleural, and pericardial cavities, even before diminution of the general edema can be ascertained, and it becomes necessary to know whether fluids should be continued or decreased. Any lengthening of the skin absorption time indicates that the tissue thirst has been satisfied; that the tissues are releasing water; and that further fluid will find its way, not into the tissue cells, but to the serous cavities, whereas if the absorption time remains short, indicating tissue thirst, fluid for the purpose of diluting toxins and promoting excretion may still be given with the knowledge that no disproportionate amount will reach the serous cavities.

When it becomes necessary or expedient to reduce edema, various methods are available. Naturally, improvement of cardiac edema depends on restoration of integrity of the heart muscle with rest, digitalis, etc. In addition, the purine diuretics, such as theobromine, theocine, and theocalcine, are of particular value, not only in promoting elimination, but in their rôle of coronary dilators increase the efficiency of the myocardium. Limitation of sodium chloride, substitution of potassium chloride for table salt, and large dosage of calcium, with viosterol or its equivalent to promote utilization—all are indicated. In cerebral edema, magnesium sulphate intravenously, as well as glucose in concentrated solution, are our two most effective procedures, other than spinal tapping.

Extremely effective, particularly in congestive heart disease, much less so in edemas of nephritis, are the mercurial diuretics in conjunction with ammonium salts. With preliminary administration of ammonium nitrate or ammonium chloride—6-10 grams daily for three days—followed by the intravenous administration of salyrgan, these old chronic edemas of cardiac failure may be kept fairly comfortable and water-free for long periods. Despite the pathologists, who say they can identify the kidney of any person who has had one injection of salyrgan.

we proceed to give this diuretic once or twice weekly for as long as three years without demonstrable impairment of renal function. One more remedy deserves consideration—formerly popular, at present practically ignored. Squills, in its various forms, will at times prove to be the miracle so ardently sought, both in cardiac and renal cases, when all other expedients have failed.

The subject of water balance cannot be left without brief mention of the antithesis of edema, dehydration. Seen almost exclusively either as a disease of infants or as a corollary to alkalosis, it has been overlooked and ignored as an entity. It is in fact as much a tissue phenomenon as edema, due to alterations which make tissues hydrophobic rather than hydrophilic. In infants the predisposing cause is usually infection. Diarrhea is not primary, but is due to the absorption into the irritated bowel of fluid released from tissues. It is fundamentally important to realize that this extremely critical condition is not due to depletion of tissues by diarrhea but that the diarrhea is nothing less than an avenue of exit of fluid no longer held by the cells, and close observers will note that diuresis precedes or accompanies alkalosis, due either to loss of hydrochloric acid from prolonged vomiting, or excessive use of certain alkalis, particularly in the treatment of gastric or duodenal ulcer. At autopsy the tissues, especially muscle, resemble a piece of smoked meat, dry and stringy. In recent years ulcer powders of sodium bicarbonate, oxide of magnesia, and bismuth, have been largely replaced by calcium preparations, and it is in these cases that we meet, not alkalosis, but dehydration, as the result of the previously mentioned action of calcium in decreasing cellular water content. In such cases, we may see extreme manifestations of dehydration with alkalosis, as determined by blood CO_2 of only moderate degree, whereas alkalosis alone of high grade may be encountered without the severe, uremic-like dehydration.

One night recently I saw a patient who had wakened to find himself totally blind. By the time I reached his home he was in coma, and in the ambulance going to the hospital he had three convulsions. He was of middle age, without any basis for such a condition. On questioning, his wife told the following facts. For a week she had feared he was losing his eyesight because of his driving. Usually a careful driver, he had

been grazing other cars, striking curbs, and cursing other drivers for their incompetence. The previous night, driving three miles to their home, he had stopped five times to urinate; had arisen numerous times during the night for the same purpose; and had finally called to her for help, unable to see a bright light directly before him. Four weeks previously he had compared symptoms with a neighbor who was under treatment for ulcer; invested in a large quantity of tri-basic calcium phosphate and calcium carbonate which he had mixed; and took a heaping teaspoonful six or eight times daily. Blood chemistry revealed CO_2 of 86 per cent and chlorides of 310 mg. per 100 c.c. Hydrochloric acid by stomach tube and sodium chloride intravenously were begun and skin absorption time taken. After three hours the intradermal wheal was still palpable and salt solution given subcutaneously was not absorbed after six hours. Retinal examination revealed normal eye grounds. Not before twelve hours did the degree of coma diminish, during which time he had several more convulsions. Forty-eight hours later he could read the largest headlines of the newspaper; skin absorption time had been reduced to ninety minutes; and subcutaneous salt solution was slowly absorbed. After ten days vision was practically normal and recovery was eventually complete. This condition was not so much alkalosis as a true dehydration; not a deprivation of fluid but a true inability of tissues to take or hold water—the exact reverse of edema. The treatment was directed partially toward overcoming the moderate degree of alkalosis, but in particular to those methods that would produce edema—that is, tissue thirst, without which no fluid would be retained. Thus dehydration, in its true sense, is a rather unusual but definite condition, the exact opposite of edema, and is due to chemical conditions which render the cells incapable of retaining fluids. It has occurred to us that one method of attacking edema, especially of the cardiac and nephrotic type, would be to induce dehydration of this type. Results in the few cases available have been unsatisfactory because of inability to push the procedure to the point of obtaining a true dehydration, due principally to the failure of the patients to coöperate. However, if the theories supporting the conception are valid, it should prove to be of some value.

MANAGEMENT OF OCCIPUT POSTERIOR*

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Occiput posterior is one of the common bugbears of obstetric practice. Much has been written about it and it is sometimes looked upon as a condition always requiring operative interference. It is with the purpose of dispelling this conception and at the same time suggesting a useful and relatively non-traumatic method of converting to anterior position those cases in which spontaneous anterior rotation does not occur that this report is presented.

Three years ago I described a method of manual rotation for use in cases in which the occiput fails spontaneously to undergo anterior rotation. This has been of great service to my associates and myself and I wish at this time to present a further consideration of this procedure based upon a larger number of cases. Many of the recent publications upon the management of occiput posterior positions advocate a rather active form of treatment, intervention being carried out at stage of labor which is too early to permit spontaneous anterior rotation to occur. In this study about 70 per cent of posterior positions spontaneously became anterior. It is possible that this number would be slightly increased were all cases left alone a still longer time.

The dread with which posterior positions are regarded by many physicians is probably based upon the fact that, in the hands of many practitioners of deficient obstetric training, only those cases are recognized as posterior which fail to rotate and never require operative treatment. Those which rotate spontaneously, nearly three quarters of the entire number, escape recognition. As it is the smaller number which do not rotate anteriorly which cause trouble, the condition is regarded with a greater dread than it actually merits.

In the management of these the total of maternal and fetal injury still remains far too great and the loss of infant life as a result of various forms of operative delivery is still far larger than it should be. A large amount of morbidity follows the traumatic deliveries to which these women are sometimes subjected. Much, if not most, of this may be avoided.

For the purpose of this study I have discarded all cases upon the ward service and

have not considered the private work of my associates and have taken only private cases delivered by myself in the past nine years. These number 1,565. In 443 of these a posterior position was present, or 27.1 per cent. This is a larger incidence than appears in many reports. This, I believe, may be explained by the fact that, as all the cases were private, the diagnosis of posterior position was made early in labor. In many services, in which observations are made and recorded by internes, the cases in which anterior rotation occurs spontaneously are recorded as anterior positions and the primary posterior position escapes recognition.

TABLE I

Total number.....	1,565
Posterior position	443 — (27.1%)
R. O. P.....	386
L. O. P.....	57

During the first stage of labor no interference should be attempted unless some unusual condition demands. Dilatation should be allowed to proceed normally and should be accomplished by the forces of nature. It is a clinical fact that labor in the presence of a posterior position tends to proceed more slowly and the obstetrician should not allow the woman to become exhausted physically or nervously. The management of labor in occipito-posterior positions begins in the first stage. Pain must be relieved during the first stage by some effective method. The woman should be brought into the second stage with her physical and nervous forces as nearly intact as possible. If possible the membranes should be preserved intact until the first stage is complete or nearly so. Only rarely will completion of dilatation manually or by Dührssen's incisions be required. These procedures should only be used after careful weighing of indications.

It is probable that in many, if not in

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most, cases, the head enters the pelvis in the transverse position. As descent proceeds, the occiput rotates anteriorly or posteriorly, most frequently the former. The most dependent portion of the presenting part tends to rotate anteriorly. Flexion is often deficient in posterior positions and this may explain the tendency of the occiput in these cases to turn toward the back.

Certain variations in the pelvis may increase the likelihood of a posterior position. These have been discussed by Thoms and by Caldwell and Molloy. Melhado suggests that possibly some alteration in the uterus itself may play a part and refers to its development from the bilateral Mullerian tracts, of which one may have developed less well than the other. It is not desired to discuss the mechanism extensively.

At the beginning of the second stage of labor the obstetrician must observe the further progress of labor carefully. It is desired that, if possible, the descent and anterior rotation of the head shall proceed normally and spontaneously. The labor must not be permitted to proceed, however, so long a time that a contraction ring develops. The second stage should never be allowed to go on longer than three hours, and, in my own work, I rarely wait more than two hours. In our experience contraction rings have developed in less than two hours but this is unusual. If labor is permitted to continue much over two and a half hours the danger of the development of a contraction ring becomes notably greater.

It should be emphasized, and the figures shown in this report will show, that operative procedures of any sort for the correction of posterior positions are needed in only a minority of cases.

If descent and anterior rotation occur, either spontaneous delivery or a simple outlet forceps terminates the labor. This occurred in 300 cases or 69.03 per cent. It is with the remainder that I am concerned in this report.

There have been a number of ways of dealing with posterior positions which have achieved popularity. All forms of operative intervention must await the completion of dilatation.

The second stage proceeds, in many cases, more slowly than when the occiput is anterior. Burger of Budapest points out that, as the anterior wall of the pelvis is shorter than the posterior, when the presenting part has

traversed a given distance in anterior positions it is nearer the pelvic floor than it would be after travelling a similar distance when occupying one of the posterior quadrants. In the majority of cases this is of little moment but in those cases in which progress is slow it becomes of importance. Should the forces of labor fail before descent and anterior rotation are accomplished, operative interference must be considered.

Rotation by means of the forceps was described by Smellie in 1790 and rediscovered by Scanzoni in the latter half of the nineteenth century. This procedure requires a double application of forceps, anterior rotation and descent of the head being accomplished at the same time. Bill of Cleveland has suggested a modification of this procedure. He makes use of the Tucker-McLane solid bladed forceps. These are applied to the head when it is still above the mid-plane, usually soon after the completion of dilatation. Rotation is accomplished before downward traction is begun, if necessary, the head being displaced slightly upward into the plane of widest diameters. Double application of the forceps is required in this procedure as in the Scanzoni operation. The operation, after the second application of forceps, is completed according to the usual rules of forceps technic. On account of the level at which the head often is, many operators prefer to use an axis traction instrument. The operation is not one which can be recommended for the inexperienced obstetric surgeon. It frequently produces extensive high vaginal tears. These are caused by the twisting strain to which the vaginal walls and their attachments are subjected. In any form of forceps rotation it must be remembered that, if the rotation is done while holding the handles of the instrument in the same plane, the tips of the instrument will describe a considerable arc. This increases materially the danger of vaginal injury. If the handles of the instrument be caused to pass through the arc of a small circle while performing the rotation the tip of the instrument will remain in the same plane, thus decreasing the leverage to which the vaginal wall is subjected. Trial with the instrument in the hands will illustrate this and indicate the size of the arc through which the handles should pass.

In some clinics version is used extensively in the management of occiput posterior.

This seems a rather radical procedure for frequent use. It has a useful though not frequent place in the management of those cases in which spontaneous anterior rotation does not occur and in which operative rotation has failed. Its frequent employment by those of small experience in operative obstetrics cannot be advocated. When manual rotation has failed, version is a very useful resource. If it is to be done with safety the second stage must not be allowed to continue until a retraction ring has formed. Should this condition be encountered, deep anesthesia may cause it to disappear or become less. The suggestion of Rucker, that in such cases five minims of adrenalin be given intramuscularly, appears to be of value. I have tried it in four cases, in which a retraction ring had definitely made its appearance and believe that it was of material assistance. In cases, also, in which the amniotic fluid has drained away, and in which it is necessary to perform version, the suggestion of Piper, that a weak sterile solution of green soap be injected into the uterus to replace the absent fluid, should be seriously considered. This may easily be introduced through a small rectal tube carried in with the hand which is to grasp the feet to turn the child. Three to five hundred cubic centimeters may be used. Such experience as I have had with this procedure has been satisfactory. If the second stage is not allowed to continue too long, a retraction ring will not often be found.

TABLE II
Management

Spontaneous rotation and delivery.....	125}	69.03%
Spontaneous rotation and forceps.....	175}	
Manual rotation and forceps.....	98	
Version only.....	14	
Failure of manual rotation and forceps....	11	
Forceps rotation	2	
Cesarean (for indications other than posterior position)	13	

My procedure of election is a form of manual rotation which has been so useful that I wish again to urge its merits. In most methods of manual rotation which have been described it is necessary to use either the left or the right hand to perform the rotation, the choice of hands depending upon the side upon which the occiput lies. This brings with it the necessity in some cases of holding the occiput in the anterior position by means of tenacula, as, if the hand is removed, it tends to resume its original posi-

tion. Again, in some cases the right blade of the forceps must be introduced first. This necessitates an awkward readjustment of the blades before they can be locked. By the method which I have used it has been possible to perform the rotation in all cases with the right hand and to introduce in all cases the left blade of the forceps first, thus obviating the tendency of the head to turn to its original position and rendering it possible always to use the left blade first.

After having completed the rotation with the hand, the thumb is withdrawn, leaving the fingers of the right hand in contact with the lateral aspect of the head. In the more frequent R. O. P. this contact of the fingers should be against the cheek or jaw of the infant. If the rotation has been done from a left posterior position it should be against the lateral aspect of the occiput. This prevents the occiput from turning back to its original posterior position.

Rotation should not be attempted before dilatation is complete nor should it be done until the head is well engaged. If interference becomes necessary before engagement has occurred some other procedure must be chosen. If it is necessary for the head to mould before engagement can occur, labor must go on until this is brought about. The elongation of the head, which is found in marked moulding, often causes an inexperienced obstetrician to assume that the head is lower in the pelvis than it really is. This error is particularly likely to occur if a well developed caput succedaneum is present, as this increases the length of the moulded head and consequently its apparent depth in the pelvis. If too much time is consumed in the process of moulding and engagement it may be wiser to adopt some other means of delivery. If after two, or at most two and a half, hours of active second stage labor, rotation has not occurred, or only partial rotation to a transverse position has taken place, or if, as occasionally may happen, the occiput has rotated into the hollow of the sacrum, active interference is indicated.

The position of the head should always be accurately determined by palpation of the posterior ear so that one may begin with an accurate knowledge of the position.

The right hand then grasps the head, spreading the fingers as widely as possible and pronating or turning the hand as far to the left as possible in order that, when the

forearm is again supinated or turned to the right, the head may be caused to rotate through as much of the necessary arc as possible. It may be necessary to grasp the head a second time if the maneuver is not completed with the first grasp. If the thin fetal skull gives under the fingers the grasp may be shifted. The position should be slightly over-corrected so that the occiput at the conclusion of the maneuver will lie slightly to the left of the midline. This is to allow for some tendency to turn back. If the head will not rotate easily at the level at which it lies at the beginning of the maneuver it may be necessary to displace it upward. In some cases this has been done to the point of complete disengagement. This brings with it the risk of prolapse of the cord. This occurred in only one case. If the cord prolapse occurs it is best to proceed to immediate version.

While the rotation of the head is being carried out with the right hand it is of material advantage to push the shoulder of the infant toward the maternal midline by pressure of the left hand exerted through the right side of the mother's abdomen. After completion of rotation the hand of the operator may be replaced by that of an assistant or a nurse, who will maintain pressure until the forceps have grasped the head and prevented resumption of the posterior position. In an occasional case, if the head is difficult to move, the right hand may be passed beyond the head and the shoulder may be pushed around. This is only exceptionally necessary.

If the posterior position is a left one the same maneuver serves. The movements are reversed and the abdominal hand pulls rather than pushes the shoulder toward the midline.

It should be emphasized that for successful accomplishment of rotation the uterine musculature must be relaxed. This requires an ether anesthetic. To accomplish rotation when the fetal body and head are firmly grasped by the uterine musculature, is often impossible, and, in any event, requires a very much greater expenditure of force.

It is remarkable with what ease the head in the corrected position will sometimes come down. Even when disengagement of the head has been necessary re-engagement readily takes place. This is easily understood, as the moulding which has already occurred, if a slight disproportion existed,

has caused the head to fit the pelvis. It should be emphasized again, that, if moulding is needed, it should take place before rotation is attempted.

If manual rotation fails, or if, after accomplishing it, it is difficult to bring down the head with the forceps, version should be done. One should not persist in attempting to do something which is obviously difficult and which will require much expenditure of force.

In 1,565 cases there were 443 posterior positions, or 27.1 per cent. Of these, 386 were right posterior and 57 left posterior. Of the posterior positions, 125 rotated and delivered spontaneously. In 175 other cases anterior rotation and descent occurred and delivery was completed by a simple outlet forceps. In 69.03 per cent of the total number spontaneous anterior rotation and descent took place, followed either by spontaneous delivery or outlet forceps. This seems to be a strong argument in favor of at least a degree of conservatism.

The procedure described above was carried out successfully in 98 cases, delivery being immediately accomplished by forceps. In 11 additional cases rotation failed and version was performed. In 14 cases version was done as a primary procedure, manual rotation not being attempted. In a recent case in which version was done as a primary procedure, as the membranes had ruptured early in labor and the fluid had drained away, 600 c.c. of weak sterile green soap solution was injected into the uterine cavity to replace the absent amniotic fluid. In this case the version seemed quite definitely to be facilitated by the presence of the soap solution. In two cases forceps rotation was done. In twelve cases, in which the occiput lay in one of the posterior quadrants, cesarean section was done. In none of these cases was the posterior position the indication for abdominal delivery. It was merely an incidental finding.

TABLE III
Morbidity

One rise to 100.4	
Total number	65 — 14.8%
Manual rotation	12
Version	8
Spontaneous delivery or low forceps....	34

The morbidity in this series has been estimated by a very exacting standard, every case in which a temperature of 100.4 appeared at any time being placed in the mor-

bid list. If the standard suggested by the American College of Surgeons and the British Medical Association were followed, the number of cases in the morbid list would be much smaller. This standard demands that a case should be considered as febrile if a temperature of 100.4 appears on any two consecutive days, excluding the first. By the more rigorous standard stated above there were 14.8 per cent of cases included, a total of 65. In 17 cases manual rotation had been done, in 8 cases version, while in 34 delivery was spontaneous or by simple outlet forceps.

TABLE IV

Mortality

Maternal	0
Fetal	1
(one premature child)	

No maternal loss of life occurred in this series. Only one infant was lost. This was a premature seven months infant which was delivered spontaneously. This case was included in a previous report made of this procedure. No infant deaths occurred in the additional cases which appear in this communication. The great majority of infant deaths which occur in operative deliveries are the result of intracranial hemorrhage. It would appear that this complication is well avoided by this method of delivery. As

has already been explained, if the soft fetal skull is felt to give under the rotating hand the grip may be shifted so as to minimize cerebral trauma to the greatest degree. Forceps are not applied until the head is in the position in which it may be caused to advance with the least application of force.

One noteworthy advantage of this procedure is the absence of high vaginal tears which may accompany forceps rotation. In our own work it has been so useful that the posterior position at present causes little anxiety, as in the great majority of cases of failure of rotation, or of partial rotation into the transverse position, the situation can be successfully dealt with.

I would emphasize the conditions named in my first paper:

1. The head must be engaged. If moulding is needed, interference must not be attempted until it has taken place.

2. Interference must precede the development of a contraction ring. For this reason the second stage must not be allowed to continue too long.

3. Relaxation of the uterine musculature is essential. Ether anesthesia is needed. This is one of the few remaining conditions in obstetrics in which ether anesthesia is still essential.

ADVANCES IN NEURO-SURGERY*

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Neurological surgery has come a long way since the first removal of a spinal cord tumor by McEwen in 1888. American surgery may be given the largest part of the credit for the advance in this special field of surgery, the exact nature of which requires attention to meticulous details in diagnosis and technic. The field is fundamentally a surgical one and the danger today, it seems to me, is to assume that if one is a good neurological diagnostician, or is skilled in neuropathological technic and diagnosis, he is pre-

eminently fitted to practice the art of neurological surgery without having a surgical background, or, what is much more important, a surgical conscience and surgical judgment. As in every type of surgical therapy, it should be the aim of the surgeon to restore his patient to as near the normal physiological condition as is humanly possible. To do this to the best of one's ability means the employment of surgical principles which apply just as forcibly to neurological surgery as they do to general surgery. Without belaboring the argument further, a neurological surgeon should first of all be a surgeon and, secondly, a surgeon who has been trained in neurological diagnosis, neurophysiology, neuro-anatomy and neuropathology. Tear away the qualifying word

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neurological in that statement and you will find the basis for the education of a surgeon.

Late in the last century a young man who had just recently finished his surgical residency at the Johns Hopkins Hospital asked his chief if, after spending some time in study abroad, he might return to handle the neurosurgical cases which came to that hospital. Rather grudgingly he was told that he would certainly starve to death but if he chose there would be no objection. Harvey Cushing's interest in the surgery of the nervous system had been stimulated by a poor negro patient who had been shot in the back and as a result had a paraplegia. After removing the bullet from the spinal canal, Cushing had the pleasure of watching the return of motion and sensation in that patient to the point of complete recovery. He went to Kocher's laboratory, where he finished a physiological experiment upon the intracranial pressure. Sir Victor Horsley was devoting his time to the surgery of the nervous system in England and Krause of Germany and Hartley of New York had described a surgical operation for the removal of the gasserian ganglion in cases of trigeminal neuralgia, but there were no well organized clinics in neurological surgery to which a young surgeon could go. With such a comparatively discouraging start Cushing embarked upon the practice of his chosen field, but only after a fine training in surgery. After going to Boston his clinic became the mecca for young men interested in this field of surgery and above all others he has served as the stimulus and guiding genius which has stamped neurological surgery as pre-eminently American. To him alone must go the credit for the group of neurological surgeons who are at work in this country and abroad.

It would be impossible to cover the entire field of neurological surgery in an exhaustive manner in a brief communication. Perhaps you may be interested in our present conceptions of a few of the experimental and clinical problems with which my associates and I have been concerned during the past few years.

PERIPHERAL NERVES

Peripheral nerve surgery received a great stimulus from the experimental and clinical studies which were made during and following the Great War. Organized groups of investigators carried out experiments

upon the histological features of degeneration and regeneration, and in addition devoted a great deal of their attention to the microscopic and clinical results which might be obtained by the use of various types of nerve transplants. There can be no question that, from both a microscopic and functional standpoint, an end-to-end suture is the ideal method of uniting a divided peripheral nerve. However, there are a group of cases even in civil life in which so much destruction has occurred that the defect in the continuity of the nerve cannot be bridged by any of the methods in common use to effect an end-to-end union. When flexion or extension of adjacent joints, transposition of the nerve from its normal anatomical course to a shorter one fail to make such a union possible, a serious problem in surgical procedure is presented. Several operations have been suggested, such as nerve crossing, cable transplants, suture *à distance*, nerve flap, tubulization and nerve transplantation. All of these with the exception of nerve crossing and, possibly, nerve transplantation have been proven to be very definite clinical failures. In peripheral nerve surgery, nerve crossing is not as feasible as it has proven to be under other circumstances because the nerve necessary to be sacrificed is usually as physiologically important as the one to be repaired.

Although nerve transplantation experiments upon animals have proven quite successful, the clinical results reported in the literature have not been as promising. This is due to the fact that the largest number of the patients operated upon by transplantations were observed during and immediately following the Great War. The conditions under which the operations were performed were far from ideal; the patients have not been followed accurately; observations were made for the most part by men not trained in neurological examinations, or by individuals who had not examined the patient previously and had not witnessed the operation. Again, criteria of the success of peripheral nerve operations vary greatly between various individuals. Recovery of pin prick sensation accompanied by a protopathic response, which occurs very early in many cases in the anatomical distribution of the injured nerve, has been interpreted as clinical evidence of regeneration. Yet, Pollock has proven very definitely that such is not the case, but that it is evidence only

of sensory overlap from the adjacent uninjured nerves. Many case reports of recovery of motor function following peripheral nerve suture or transplantation are in the literature which are invalidated because the movements recorded are those of supplementary motility produced by unparalyzed muscles. Therefore, it may be said that no true picture now exists concerning our knowledge of the failure or success of nerve transplantation and, perhaps, even of end-to-end suture.

In an effort to add some knowledge to this subject of nerve transplantation, experiments were carried out upon animals. A portion of the sciatic nerve was removed, varying from two to four inches in length, and then resutured into the nerve trunk. In some instances the transplant was reversed and in other animals a transplant was obtained from the sciatic nerve of another animal of the same species. We found that whereas nerve fibers passed through the proximal suture line very readily and could be found within the nerve transplant, by the time they reached the distal suture line so much scar tissue had formed that they were turned back and blocked. Consequently, after varying intervals of time, dependent entirely upon the length of the transplant, we re-operated upon the animals, resected the distal suture line and again sutured it. We then found later that the nerve fibers passed completely through the transplant and into the distal segment of the nerve trunk. We believe this may very logically be the cause for the poor results reported following nerve transplantation, because after an exhaustive search of the literature we have been unable to find any reference to the employment of such a procedure.

Only recently we have had an opportunity of using this method in the case of a patient whose tibial nerve was injured in an accident with a cultivator. A defect of three inches in the continuity of the nerve just above the ankle could not be bridged by any method. A transplant was used from the sciatic nerve of an individual whose leg had been amputated. About 100 days after the first operation, the second stage was performed. The transplant was in excellent condition, had not shrunk in size and the proximal suture line showed a satisfactory gross appearance. Sufficient time has not elapsed to be able to report upon the functional results in this patient.

FACIAL NERVE

Of the cranial nerves, the facial or seventh nerve is the one most commonly injured. Stab or gunshot wounds, and inadvertent division of the nerve during a mastoid operation are the most frequent etiological factors. In only a very few cases can an end-to-end suture be employed to repair the nerve and recourse must be had to other methods. Here, in contradistinction to the peripheral nerves, the method of nerve crossing may be used without fear of producing more damage than benefit.

A review of the many experimental and clinical reports upon the repair of facial nerve lesions in the literature emphasizes the fact that the spinal accessory and hypoglossal nerves have been the two cranial nerves most frequently and successfully used in such operations. I have operated upon four such cases, in three of which I have anastomosed the hypoglossal and facial nerves and in the other a spinal accessory-facial nerve crossing was performed. I am quite convinced that the results obtained with the hypoglossal nerve are superior to those which followed the use of the spinal accessory nerve. In any case, however, it is extremely important that the tone of the facial muscles be preserved so that when the nerve fibers have regenerated, an effector mechanism will exist and be in readiness to carry out the impulses transmitted to the muscles. Consequently, immediately following a facial nerve paralysis one of two methods should be employed. A simple adhesive tape splint should be worn to hold the muscles up and keep them from sagging, or a facial transplant should be placed into the subcutaneous tissues attached from the zygomatic process to the angle of the mouth and the lips. In neglected cases the latter procedure should be employed immediately. I believe that the final result following the nerve anastomosis will be more successful if the combination of fascial transplant and nerve crossing operations be used. There is little or no discomfort to the patient as a result of the atrophy of the tongue which follows section of the hypoglossal nerve.

The first evidence of return of function to the facial muscles will be noted after about six to eight months, when the tone of the muscles begins to improve and it is noted that the facial asymmetry is less marked. This occurs first usually in the orbicularis oculi muscle and later in the lower facial

muscles. Recovery may require eighteen months to two years and in one patient operated upon definite evidences of progress are to be seen twenty-two months following the operation. At the beginning contractions of the facial muscles accompany movements of the tongue. Later the patient learns to dissociate these movements successfully. During all of the period of recovery regular and intensive physical therapy should be employed. Gentle massage and electrical stimulation to the facial muscles play a very important rôle in recovery here as well as in peripheral nerve surgery.

In view of the mediocre results reported in the use of large nerve trunks as transplants in the repair of defects in peripheral nerves, it is difficult to believe that a transplant can be laid between the divided ends of the facial nerve in its bony canal and be followed by the successful results which have been reported in the literature recently. Certainly the surgical field is a small and difficult one and there is no reason to believe that scar tissue would not block the down-growing axons of the facial nerve even to a greater extent than is true in peripheral nerve transplants, since no direct end-to-end apposition is made between the nerve and the transplant.

TRIGEMINAL NEURALGIA

Although it was described accurately as a clinical entity in 1776 by John Fothergill, the surgical treatment of trigeminal neuralgia has a more recent history. The early attempts to attack the gasserian ganglion by a procedure which involved resection of the zygomatic process were attended by an enormous and prohibitive mortality. As a result, palliative procedures such as alcoholic injections and resection of the peripheral branches of the nerve became popular. Unfortunately, neither of these methods produced a permanent relief from the pain and the patients always returned complaining bitterly. Then in 1890, Hartley and Krause almost simultaneously proposed the approach to the ganglion through the temporal bone which formed the basis for the present-day highly successful operation which in the hands of trained neurological surgeons entails an operative mortality of less than one per cent. As you know, the present operation consists in dividing the sensory root posterior to the gasserian ganglion, a procedure suggested by Spiller of Philadel-

phia, who demonstrated that, since the fibers had no neurilemmal sheaths as they entered the pons, regeneration could never take place. Refinements in technic have been developed so that it has become possible to perform a subtotal division of the sensory root which allows one to conserve those divisions of the nerve not involved and to preserve intact the motor root which innervates the pterygoid and masseter muscles.

Recently it has been suggested that the sensory root should be exposed by a suboccipital craniotomy because division of the root in the region of its entrance zone into the pons is followed by a loss of the pain, but there is no resulting loss of sensation. If this were true it would indeed be an ideal operation. Experimental and clinical facts are in evidence which speak strongly against such a supposition. It is an axiom that severance of nerve fibers, whether they be sensory or motor in character, is followed by a loss of that function. Such results might well be possible if within the sensory root of the trigeminal nerve there were an arrangement of fibers in a topographic manner. It has been shown rather conclusively by the work of Gasser and Erlanger, Ranson, Ingvar and others that unmyelinated and the smallest myelinated nerve fibers conduct pain stimuli, while the larger myelinated fibers conduct touch stimuli. With these facts in mind, cross sections of the sensory root of the trigeminal nerve from both cats and human being were studied. It was found that the small and large fibers are more or less regularly intermingled without any definite arrangements into topographic division. This was true in the sections near the ganglion as well as in those near the brain stem. From this experimental work, it was concluded that there is no physiologic foundation for an operation aimed at the differential interruption of certain functions by partial section of the sensory root near the brain stem. From a study of the developmental and gross anatomy of the sensory root of the fifth nerve in the human, it is obvious that the fibers which come from the various divisions of the ganglion occupy a definite position in the root in the region of its entrance zone into the pons. The fibers from the ophthalmic division lie in the inferior and medial position; those from the mandibular division occupy the superior and lateral position; and those from the maxillary division occupy the interme-

diate zone. In a series of degeneration experiments which were performed, it seems quite evident that division of the inferior portion of the sensory root at its entrance into the pons, as has been suggested, would sever the fibers of the ophthalmic portion of the ganglion. If three-fourths of the inferior portion of the root were severed by a suboccipital approach, as has been recommended, most of the maxillary and a few of the mandibular fibers would also be sacrificed. On the other hand, if only a small section of the inferior portion of the root were made, a small number of the ophthalmic fibers would be severed and a rather large proportion of the mandibular and maxillary fibers would be left intact. Only under this condition, in the light of our investigations, is it conceivable that sensation can be conserved over most of the area supplied by the trigeminal nerve. It remains to be proved whether or not the pain of trigeminal neuralgia can be relieved permanently under such conditions.

SENSATION OF TRANSPLANTED SKIN

An interesting and fertile field for the study of problems in sensation may be found in the records of the returns of sensation to transplants of skin. Although the opportunities have been present for a long time, there are but few scattered reports upon the subject in the literature. It has been my good fortune to have been associated with Dr. Allen B. Kanavel and his pupils who have followed him in the study of the surgical problems of the hand. As a result during the past fourteen years, it has been possible to study repeatedly the pedicle, free full thickness and Thiersch grafts of skin which they have transferred from various portions of the body. All of these transplants were, of course, completely severed from their nerve supply. Some were placed over areas the nerve supply of which had been severed by the original injury and it became interesting to determine whether sensory overlap occurred in the transplants of skin as it does normally.

Briefly, it can be said that sensation returns to skin transplants in a definite and unvarying manner. Sensibility to pin prick returns first, followed closely by cold and then later by tactile sensation. Almost invariably the patient experiences an unpleasant, very painful sensation early in the course of the return of pin prick sensibility.

This reaction is analogous to that described by Henry Head as protopathic sensation. As tactile sensibility recovers, this protopathic response disappears until finally sensation to pin prick is appreciated in a normal manner. The pattern of return of sensation proceeds from the periphery of the transplant and advances distally. This pattern is modified if the transplant has been placed over an area part of which has a normal nerve supply and the rest of which is insensitive. Under such circumstances the advance of sensation comes only from that portion of the transplant which lies over the innervated area. It has been our experience that return of sensibility occurs more completely and sooner in the pedicle flaps than in free full thickness or Thiersch grafts, but the rapidity of return also depends upon the amount of subcutaneous tissue which is included in the transplant. The early pedicle transplants which were thick showed a much slower return of sensibility.

Evidence is difficult to present as to the exact manner in which the nerve fibers grow into the transplants but we have some reason to believe that the regenerating fibers do not enter protoplasmic bands within the transplant. It is more likely that they enter the transplanted skin as naked unmyelinated fibers, which explains the character of the early response to pin prick stimulation, which disappears as myelin sheaths are acquired.

VISCERAL SENSATION

Some years ago while at work in Ranson's laboratory, it became of some interest to know whether or not painful impulses from the viscera traveled over the same pathways within the spinal cord as somatic painful impulses. Ranson and his workers had proved that somatic painful impulses enter the spinal cord through the lateral division of the posterior spinal roots and then ascend in the spinal cord within the lateral columns of the white matter.

Stimulation of the thoracic sympathetic trunk was used as a method of producing visceral afferent impulses. It was found that although impulses entered the spinal cord through the posterior spinal roots, they were conducted upward by relays of short spinal paths with synapses in the gray matter of the spinal cord and that only a complete transverse section of the spinal cord would obliterate them. It was realized that these ex-

periments should be repeated, using stimuli more closely analogous to physiological visceral impulses. Dilation of the cystic duct and gall bladder was accomplished by a rubber balloon and this procedure was accompanied by marked inhibition of respiration, vomiting, struggling and other evidences of pain. The results which were obtained were identical in every respect with the earlier experiments.

These experimental facts have a definite and direct application in clinical surgery. For several years, anterolateral sections of the spinal cord have been performed for the relief of intractable pain. Although these chordotomy operations relieved pain of somatic origin, the pain of the visceral crises of *tabes dorsalis*, for example, was unaffected. In other words, if the section is limited to the anterolateral tracts, visceral pain will not be relieved, but if the section be carried deeper to include the gray matter, visceral pain may be relieved successfully.

It was quite natural to become interested in the mechanism of the reference and recognition of pain from visceral disease in the periphery. A number of theories exist for the explanation of just why, for example, the pain of gall bladder colic is referred to the scapular area. It has been proven that the original idea of Lennander that all visceral pain was mediated through the parietal peritoneum was incorrect. Ross has stated that either true visceral pain may be present alone or it may occur in association with pain in the skin, muscles and connective tissue innervated by the same spinal segments. Another theory accounted for pain in visceral disease as purely reflex in origin. Impulses were traced through the afferent fibers of the vegetative nervous system to the spinal cord, where it was stated that radiation occurred along the sensory tracts to the abdominal wall. Spiegel states that the impulses pass to the posterior horns of the gray matter of the spinal cord and are there diffused to the roots of the corresponding somatic nerves. Among others, Henry Head believes that in visceral disease a form of irritation is produced in the spinal cord and that sensory impulses from other parts passing into this segment are so exaggerated as to be painful.

Recently, Weiss and Davis, and Lemaire have been able to relieve the pain of angina pectoris, gall bladder colic and other intra-abdominal lesions by the subcutaneous infil-

tration of procaine hydrochloride solution in the peripheral area to which the pain is referred. Pollock and I have some experimental evidence to support these clinical observations in that the evidences of pain produced in an animal by dilation of the cystic duct are definitely altered by section of the intercostal nerves. As a result of other experiments, the details of which need not be given here, Pollock and I have suggested that visceral painful impulses produce efferent cutaneous reflex effects, which in turn liberate a metabolite in the skin which is painful. These painful impulses are in turn carried into the cord and to consciousness over the well known somatic afferent pathways.

Emphasis on the rôle of the sympathetic nervous system in the production of pain has resulted from the clinical reports of the relief of such types of pain as angina pectoris, causalgia and other abdominal pains by various surgical operations. For example, Jonnesco has relieved the pain of angina pectoris by the removal of the middle, inferior cervical and first thoracic ganglions of the left sympathetic chain. Abdominal pains have been relieved by section of the abdominal sympathetic nerves, and the sacral portion of the sympathetic trunk has been resected for the relief of pain in inoperable carcinoma of the uterus. Although pain may be produced by stimulation, or relieved by severance of suitable parts of the sympathetic nervous system, there is no agreement as to the physiologic mechanism involved. Painful impulses may be conducted along the sympathetic nerve fibers, or the visceromotor or other reflex activities may produce conditions which in turn are responsible for conscious pain. On the other hand, both mechanisms may be present.

In a series of experiments to determine the rôle of the sympathetic fibers in the production of pain in the face, Pollock and I found that (1) stimulation of the cervical sympathetic trunk does not produce pain and that (2) stimulation of the superior cervical sympathetic ganglion produces pain. The latter fact holds true after section of a large number of anterior and posterior spinal roots, beginning with the first cervical segment. It is also true after section of the anterior spinal roots and section of the sensory root of the trigeminal nerve. Pain could not be produced, however, by stimulation of the isolated ganglion after section

of the posterior spinal roots and the sensory root of the trigeminal nerve. It is probable, therefore, that stimulation of the superior cervical sympathetic ganglion produces an effect which is carried by way of postganglionic efferent fibers to the structures innervated by the sympathetic fibers. These efferent impulses produce an effect on the skin and other structures the exact nature of which is as yet unknown. It is quite possible that this effect is linked with the sympathetic innervation of the blood vessels and that a metabolite is liberated which in turn stimulates the ordinary sensory nerve endings of the fifth nerve. This impulse is then transmitted centrally and is recognized as pain. The relief of pain of visceral disease elsewhere in the body by severing sympathetic fibers may very well be upon an analogous basis.

SURGERY OF SYMPATHETIC NERVOUS SYSTEM

The sympathetic system was discovered only recently by the surgeon and, although surgical empiricism may be fraught with danger, in some instances it has provided the stimulus for sound physiological work which has either corroborated or disproved the rationale of a given operation. The most recent wave of surgical interest in the autonomic nervous system dates from the conception that spastic paralysis might be relieved by section of the sympathetic supply to the involved limbs. That this was a misconception has been proved by a large number of investigators in both clinical and experimental fields. However, it was noted that the skin of the extremities became warmer after such an operation and if the removal of sympathetic supply was complete this effect would persist. Consequently, attention was directed to the vascular diseases of the extremities the pathogenesis of which was little understood, and the classification confused; but the treatment of which was uniformly unsuccessful. The fever test, injection of peripheral nerves, and other methods now provide accurate means of determining before operation whether or not sympathectomy will be followed by vasodilatation. Certainly it has been well established that periarterial sympathectomy will not remove the sympathetic nerve supply to a vessel except in the local segment operated upon. Therefore, removal of ganglia or the sympathetic trunks are the types of operation which offer the most successful results in this group of cases.

Just how far surgical attacks upon the sympathetic nervous system may go is hard to say, particularly if we think in terms of a few, as yet uncompleted, experimental facts which I wish to present to you in conclusion, concerning the interrelation between the various glands of internal secretion, the autonomic system and carbohydrate metabolism.

Interest in the pituitary gland was stimulated greatly by the work of Cushing, first in the experimental laboratory and later in his clinic. Later, Philip Smith, working with rats, was able to show that if he removed the hypophysis without injury to the neighboring structures he produced an animal far below weight, of diminutive stature, with atrophied testicles and atrophy of the other glands of internal secretion, particularly the thyroid. If, on the other hand, he produced a lesion of the tuber cinereum the rat became enormously obese. There followed also a hypogonadism but the other endocrine glands remained normal. Smith and also Evans were able to produce in rats the symptoms of gigantism and acromegaly by feeding anterior lobe extracts daily. The importance of these experiments in connection with the clinical symptoms of hypopituitarism and hyperpituitarism characterized by acromegaly, gigantism and Froehlich's syndrome cannot be overemphasized.

Recently, Houssay reported a group of experiments on dogs in which he removed the hypophysis and then later performed a pancreatectomy on the animal. To the astonishment of scientists those hypophysectomized animals did not develop a diabetes mellitus as do otherwise normal animals. Houssay was able to show that if he later fed these hypophysectomized-pancreatectomized dogs anterior pituitary lobe extract he could produce a hyperglycemia and glycosuria of extremely high grade.

The controversy as to whether or not the effects produced following experimental hypophysectomy are due to removal of the gland or to injury of adjacent parts of the mid-brain, such as the tuber cinereum, has been a long and bitter one. There is no question but that it is difficult to remove the hypophysis experimentally in animals unless one chooses the lower vertebrates for experimentation. In the dog or cat it is a difficult procedure. Therefore, we have undertaken a series of experiments in which we have made lesions of the hypothalamus, that is in

the tuber cinereum, with the Clark-Horsley stereotaxic instrument. This is a device by which a minute electrolytic lesion may be placed at any point within the entire brain by the adjustment of micrometer scales and the use of an anatomical chart prepared in Ranson's laboratory for the cat's brain. Such lesions were made and after the animals had completely recovered and the blood sugars were normal, the pancreas was removed completely. Whereas, in the normal cat, following removal of the pancreas, a very high blood sugar results immediately and the animal dies unless kept upon large doses of insulin, such animals ran normal blood sugars on a standard laboratory diet. The very careful serial neuropathological sections of these animals' brains showed no lesions in the hypophysis. Houssay's experiments were corroborated on several cats in which a lesion of the hypophysis was made deliberately. These experiments suggested that perhaps in making a lesion of the hypothalamus we interrupted the nerve supply to the pituitary gland, which has long been established anatomically. On such an explanation both groups of experiments could be correct.

It has been shown by Dandy that the pituitary body received a supply of sympathetic nerve fibers which undoubtedly had their cells of origin in the superior cervical ganglion. Cushing, Goetsch and Jacobson had also shown that stimulation of this ganglion with a faradic current for a few seconds was followed by a glycosuria, provided the animal had an available glycogen supply. At that time these observers did not have at their command simple or accurate methods for determining blood sugars and, therefore, were unable to report upon that aspect of their problem. They did show further, however, that stimulation of the sympathetic trunk was not followed by glycosuria. These experiments have been repeated and elaborated. There is no question but that a pronounced glycosuria and a rise in blood sugar to double the normal value can be produced by faradic stimulation of the superior cervical ganglion. This cannot be produced by stimulation of the trunk, by stimulation of the vagus or other peripheral nerves. We have also produced a glycosuria and hyperglycemia by stimulation of the stellate ganglion, although the effect is not as marked. This result is obtained regardless of whether or not the sympathetic trunk is divided above

or below the ganglion. In another series of experiments, a lesion was made in the hypothalamus and the superior cervical sympathetic ganglion was then stimulated. Provided the lesion is made in the correct area, a glycosuria or hypoglycemia do not develop. Glycosuria does not develop after stimulation of the superior cervical sympathetic ganglion if both sympathetic splanchnic nerves are removed.

It is always difficult to correlate knowledge provided by the laboratory with clinical experience. Many times our records of patients fail to record what later becomes of great interest to us to know; in other instances we do not know for what to search. There are many clinical examples of the relationship between the various lobes of the hypophysis and a neural mechanism in the hypothalamus. Besides the question of carbohydrate metabolism, there is the occurrence of diabetes insipidus, adiposity, thermal regulation, pathological sleep and states of hypoglycemia. On the contrary, it may be asked why does one see many cases of intracranial tumor, in which as a result of secondary hydrocephalus the walls of the third ventricle may be so ballooned out and thinned that degeneration must invariably occur, without any recognizable clinical manifestations? To the influence upon carbohydrate metabolism of this rather well-defined neuro-hypophyseal mechanism, is added the relationship of the autonomic nervous system and the thoracic and abdominal viscera.

We have as yet no evidence which would lead to any information regarding the source of the carbohydrates mobilized in these experiments. The work of Griffith led him to believe that hyperglycemia may develop from stimulation experiments without involving the pancreas, thyroid, parathyroid or the hypophysis, provided the adrenals are intact. As a corollary, Houssay, Biasotti and Rietti have reported that the diabetogenic action of anterior lobe extract may be observed in the absence of the pancreas, hypophysis, thyroid, ovaries, testicles, splanchnic nerves, lumbar sympathetic chains, adrenals, or a lesion of the tuber cinereum. They concluded, however, that the liver alone was necessary.

Certain it is that there is evidence enough to throw some doubt upon the idea that the islets of the pancreas have an independent secretory control over carbohydrate metab-

olism. It is well established that typical lesions exclusively characteristic of diabetes have not been found in the pancreas. In fact, Allen has observed changes in the pancreas described as characteristic of diabetes in almost fifty per cent of cases in which

there was no diabetes. It would, indeed, be strange if Nature had concentrated the control of such a vital function in one organ. It is more logical to believe that sugar disposal is more carefully safeguarded by perhaps multiple mechanism.

HOSPITAL INSURANCE; INDUSTRIAL SURGERY

(*New England Journal of Medicine*)

Throughout the past week the American College of Surgeons has been in our midst, and, as always, countless clinics have been given, and addresses have been delivered. It has been well done, and especially worthwhile. Foreign guests came to give and perhaps learn, and there were meetings for lay education and for discussion of hospital standards and hospital betterment. Of all this, without going into detail, one may only praise the extent of enterprise and the executive ability shown in achieving its ends.

Somewhat out of the ordinary, however, are two matters touched upon in Dr. Greenough's excellent inaugural address. First, a frank facing of the problem of hospital costs for the less well-to-do, and a recognition of the fact (logically inescapable as a fact finding) that for vast numbers of people under present conditions the cost of hospitalization in severe illness or in the case of a major surgical operation cannot be met as a current expenditure. This being so, as he points out, the only alternative to a collapse of independent high-grade people into the class of indigents is some form of prepaying arrangement. One may as well say insurance, for that it must be, by definition. But Dr. Greenough clearly voiced the opinion of the profession that such adjustment of expenditure to paying ability must not be exploited. The profession, not the commercial exploiter, should be the director of such "insurance."

Already we have seen exploitation of this sort. It is condemned by us without reserve, and all will agree with Dr. Greenough in his treatment of the subject. But, unfortunately, in our reaction against such commercial abuses, we are in danger of forgetting the problem still before us.

Some scheme of adjustment of income to expense we must have in fairness to the public and the profession. This implies that the profession should work out the means rather than that unworthy schemes should be "put over" on them. And there lies the danger!

The College seems to be facing this problem squarely, though with no detailed panacea to urge on us at this time.

Probably a field survey of experiments in this line, made and in the making in many communities,

should come before any hard and fast recommendations can be offered as to details.

The second matter in Dr. Greenough's address which should have especial mention here is the coming of the College into the field of Industrial Surgery.

There is no question but that there has been vast wastage of life and of usefulness from inadequate surgical care in this field, due to external conditions very often, but sometimes to bad surgery.

Fortified by several years of quiet investigation, Dr. Besley's "Board of Industrial Medicine and Traumatic Surgery" made a report, issued this spring as a bulletin of the College, giving, first, the best résumé of current conditions so far brought to our attention; secondly, a minimum standard of equipment and organization for the performance of good work; and thirdly, the minimum standard of training and experience fairly to be required of men assuming professional responsibility for such serious work.

Very lately, contact has been made by the College with a duly qualified insurance "council" interested as we all are in seeing that the workman injured in industry shall get the best of care, "sold" on the proposition that the best surgical care is the cheapest in the end.

There is reason to believe that these two groups, working together, may do much in raising standards of efficient care.

And so the College, besides its more obvious activities, instanced in this recent meeting, is going forward quietly working to raise standards of surgical training and fitness, standards of hospital equipment, staff quality, administration, standards of diagnosis and care of malignant disease, standards of fracture treatment, and, now, standards of industrial surgery.

If the College means anything it means insistence on *quality* and, in the results of such insistence, it seems to have shown no little success.

EDITORIAL NOTE: This is an editorial which appeared in the *New England Journal of Medicine* of October twenty-fifth under the title "The Visit of the American College of Surgeons" which met in Boston in October. We have here reference to two very important subjects, "The Provision of Hospital Care at a Price that Will not Cause Financial Distress," and, secondly, "The Improvement of Industrial Surgery."

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DECEMBER, 1934

EDITORIAL

MEDICAL-SOCIAL ECONOMICS

Upon the recommendation of the committee on committee reports, the House of Delegates of our society, at the Battle Creek meeting, voted not to experiment at present with the mutual health service plan presented by the Committee on Economics. Whether this was best or not time alone will tell. It was, however, the only rational decision that could have been made under the circumstances. It was apparent that the profession of the state is not ready to begin something that might eventuate in so decided a change in practice, despite the fact that serious sociological questions are pressing for solution and that the great majority of physicians are carrying on with difficulty under drastic reduction of income. The administration at Washington is formulating plans to relieve unemployment, poverty and the distress of old age and sickness all too prevalent today, and constituting perhaps the country's most pressing social and economic problems. Medical care occupies, of course, a conspicuous place in such programs. Judging from what is heard I believe we may safely assume that the plans are being most carefully considered and with the intent to serve both the interests of the recipients of medical care and those who dispense it. Should these plans, whatever they may be, go forward and into operation

our profession will be vitally affected—for good or evil who can say? We, in Michigan, will not be caught unawares, thanks to the work of our Survey Committee and the Committee on Medical Economics that followed it. We know the problems here and have even outlined tentatively a mutual health service plan to meet them. It will stand us in good stead whatever may develop.

The recent decision of the House of Delegates, reflecting, as it does, the general sentiment of the profession throughout the state, demonstrates in no uncertain manner that we, as practicing physicians, desire to continue in the traditional way to maintain the physician-patient relationship, our independence, the control of our practice, and the opportunity to succeed individually according to character, energy and merit, receiving such remuneration—often meager and inadequate—as our patients can give us. We prefer this to regimentation and its uncertainties, a greatly increased amount of medical work, a more regular income and possibly—though here opinions vary—a much more remunerative one.

Richard R. Smith.

LEADERSHIP

A certain spirit of independence has characterized members of the medical profession. We are physicians or members of a profession among other reasons because we prefer to regiment our own lives as far as possible. The punching of a time clock is distasteful to us even though, when necessity demands it, regular hours mean nothing to us. We can work twenty-four hours a day when necessary without complaint. We take kindly to such terms as "rugged individualism" and "laissez faire," and feel that if outside factors will not interfere, we can make good and render useful service. The fact that under normal times and conditions and even under abnormal conditions we can carry on, asking no favors from society that we do not compensate, has rendered us somewhat oblivious of changes that have been going on around us. Almost until the past two or three years it was considered undignified and commercial to discuss at a medical meeting any subject that did not

pertain to the scientific phases of medicine. Today we find ourselves confronted with economic and social problems that threaten our very existence as respectable members of organized society.

We are very much in need of leadership, which does not seem to be forthcoming as one would wish. A group of individualists is made up of all leaders so to speak, while real leadership implies also followers. There must be followers if there is to be leadership, and this means subordination of one's individualism for the sake of the greater good of the group.

There has been a movement towards the socialization of almost everything, industrial, commercial; even professional vocations have not been exempt. This does not mean what is politically known as socialism, far from it. The socialist candidate for public office has not met with much favor; yet the spirit of collectivism is in the air. We cannot stand aloof. Medicine is a basic necessity, second only to food and shelter. What the solution of the problem will be, cannot be predicted at this time. In matters involving public health and medical care the initiative should come from those who know most about the subject. We should therefore compromise our individual views in the interests of effective leadership and that leadership should be from the medical profession.

DR. BRUCE APPOINTED

Dr. James D. Bruce, Vice-President of the University of Michigan and Director of the Department of Post-Graduate Medicine, has been appointed to President Roosevelt's Committee on Economic Security. While men prominent in organized medicine have been selected, no organized body of the medical profession such as county, state, or national has been officially recognized in this work. Official recognition would mean an appeal to the organization, which would in turn select its own representative. However, the selection has demonstrated the wisdom of the choice. The men chosen from the medical profession are all men who are high up in the confidence of the various organizations to which they belong and can be depended upon to bring to the task sane and seasoned judgment.

Dr. Bruce comes from the ranks of Mich-

igan doctors and is thoroughly conversant with medical conditions as they prevail in this state at present. He can be depended upon to view the matter in hand, whatever it may be, without that emotion that too often befogs such discussions. Dr. Bruce's major interest the past few years has been education and more particularly that branch of education which goes to making the physician a better practitioner of the art after he has completed his formal medical training. His long experience as councilor of the Michigan State Medical Society has given him an insight into the social and economic condition of the physician and surgeon, as well as the matter of quality of medical care and the effort towards its improvement in this state.

PRACTICE IN OTHER COUNTRIES

Elsewhere in this number of the JOURNAL we print an interview given out by the Secretary of the British Medical Association on the medical situation in England. In the November number appeared a short interview with one of our own members, Dr. F. E. Hansen, who had returned after a two months' sojourn in Denmark. Dr. Hansen is himself Danish and with his thorough knowledge of the language he was able to enter intelligently into the spirit of the Danes. The January (1934) number of this JOURNAL contained a paper on the "Practice of Medicine," in Germany; the author, Dr. A. H. Mollman, who had practiced in Germany, is now located in Grand Rapids. "Medical Impression of Soviet Russia," by Dr. J. E. Waddington, appeared in this JOURNAL (Vol. XXX, page 25). It is our purpose to present as accurate account of medical practice in European countries as may be available, from time to time, not necessarily for the purpose of endorsing any of them. The Luce-Sinai mission, while convinced that the panel system suited perhaps the majority of the British people as well as British physicians, did not recommend it for the United States.

The problem of medical care for the United States is not so easy of solution considering the geographical area and diversified climate and industrial conditions that prevail here. It should be remembered that a morning paper published in London may be read within less than twenty-four hours in the remotest regions of the British Isles.

A newspaper likewise published in any other capital in Europe except Moscow can reach the confines of the country in less than twenty-four hours. This is not true in the United States, where, due to the great geographical reaches, the interests of the people are apt to be more or less diversified and sectional. We have the extremes again, from the highly complicated industrial centers to the purely pastoral, or agricultural, or mining. Some of our states are much larger than many of the old world countries. These very facts complicate the problem here so that the operation of medical systems in Europe can constitute for us only a matter of interest. Homogeneity of population is a factor favorable to European countries. Much as it would be desirable, for instance, from the doctor's viewpoint, as Dr. Hansen intimates in Denmark, that the municipality would come good for delinquent patients' bills, the idea would be too fantastic to even mention in this country.

Michigan has done thorough work through its economic committee. The suggested plan of Health Service is held in abeyance with instructions from the House of Delegates to be prepared to meet any move on the part of the state or national government. The House of Delegates of the American Medical Association has crystallized its position in the following ten points, or "Ten Commandments," as one editor has facetiously called them; though they have already appeared in this JOURNAL, we repeat them:

(1) All features of medical service in any method of medical practice should be under the control of the medical profession. No other body or individual is legally or educationally equipped to exercise such control.

(2) No third party must be permitted to come between the patient and his physician in any medical relation. All responsibility for the character of medical service must be borne by the profession.

(3) Patients must have absolute freedom to choose a duly qualified doctor of medicine who will service them from among all those qualified to practice and who are willing to give service.

(4) The method of giving the service must retain a permanent, confidential relation between the patient and a "family physician." This relation must be the fundamental and dominating feature of any system.

(5) All medical phases of all institutions involved in the medical service should be under professional control, being understood that hospital service and medical service should be considered separately. These institutions are but expansions of the equipment of the physician. He is the only one whom the laws of all nations recognize as competent to use them in the delivery of service. The medical profession alone can determine the adequacy

and character of such institutions. Their value depends on their operation according to medical standards.

(6) However the cost of medical service may be distributed, the immediate cost should be borne by the patient if able to pay at the time the service is rendered.

(7) Medical service must have no connection with any cash business.

(8) Any form of medical service should include within its scope all qualified physicians of the locality covered by its operation who wish to give service under the conditions established.

(9) Systems for the relief of low income classes should be limited strictly to those below the "comfort level" standard of incomes.

(10) There should be no restrictions on treatment or prescribing not formulated and enforced by the organized medical profession.

WHAT AILS NURSING?

After a period of study extending over eight years the Committee on the Grading of Nursing Schools has completed its work and has issued its final report. The personnel of this committee is rather formidable, representative as it is of a number of such organizations as the American Nurses' Association, American Medical Association, American College of Surgeons, American Hospital Association, to mention a few institutions, in addition to a number of prominent persons unattached to any organization. The questioning title of this editorial is answered by the report in two words, "undereducation" and "overproduction." According to the census of 1930, there were in the United States 288,737 trained women nurses and 5,452 men nurses, or one woman trained nurse for every 424 persons of the general population.

Of course, the corollary to "overproduction" is unemployment, which was evident even in 1926, when the committee began its work. This problem has only been deeply accentuated during the depression.

The committee in discussing the matter of "undereducation" of the nurse, attributes the condition to faulty application of the apprentice system in the training of the nurse, and the use of the nursing school to provide most or all of the nursing service of the hospital. There are 1,583 nursing schools in the United States which are classified by the committee as a few very good ones, a few very poor ones and the majority which are neither good nor poor. Those which are connected with the University are among the best. This includes those schools which have access to the University facul-

ties, particularly the faculties of medical schools. The mediocre schools mentioned are those subordinate to the needs of hospitals who place the entire burden of nursing service on student nurses. Only two per cent of the schools in the United States are controlled by Universities; most are controlled by hospitals. Quoting from the report: "While hospitals practically train most of the graduate nurses, they employ but very few of their graduates in their services, using instead nursing students."

The remedy proposed is to stop the "over-production" of nurses by closing most of the training schools. There is a movement of graduate nursing back into the hospitals which if it continues on any large scale will mean the salvation of the nursing profession. The employing of graduate nurses in hospitals to replace students and practical nurses and attendants will, of course, mean better nursing for patients. Fewer nursing schools, which could be accomplished by the elimination of the inefficient ones, would result in better training. The committee also advocates the registration and licensing of all competent graduate nurses by the state.

The complete report of the committee published under the title of "Nursing Schools Today and Tomorrow," is a volume that should be taken seriously. It covers almost a decade of unbiased investigation.

ACCIDENTAL DEATH

He had a prophylactic bent
And led a sterile life,
Had hygienic children and
A sanitary wife,
Lived in a fumigated house
And wore aseptic suits,
Ate germicidal food and smoked
Denicotined cheroots.

His milk was always pasteurized,
He drank denatured water,
He ne'er forgot to swat the flies,
Mosquitoes he would slaughter.
He screened his doors and windows,
His office disinfected:
Against microbes of every kind
He felt himself protected.

He exercised, he slept by rule
And timed his every breath,
His health was excellent and he
Defied disease and death.
His plan was admirable, no doubt,
Alas, the measly luck!
He went out and got run over
By a ten-ton power truck.

—VICTOR LEVINE in *Nebraska Medical Journal*.



The Editor's Easy Chair

EFFICIENCY

Two things (there may be others) make for efficiency, namely, technics and organization. There have appeared recently two thought-provoking books which throw considerable light on the subject, one "Technics and Civilization," by Louis Mumford, and "Freedom versus Organization," by Bertrand Russell. The former traces the evolution of tools and machinery from the tenth century. The latter is concerned principally with the nineteenth century, its political and economic course. Both, it is apparent, deal with subjects of vital interest to the present generation. While the nineteenth century and the first third of the twentieth century have witnessed the greatest development in machinery, the mechanization of industry, this progressive movement had run a fitful course long before the invention of the steam engine by James Watt in 1776. The evolution of technics had progressed a long way in advance of organization. The latter is a matter largely of the nineteenth and twentieth centuries. Mumford makes a distinction between the tool and the machine. The tool is the smaller instrument which demands great personal skill in its use. The machine tends in its evolution to become automatic. One implies skill on the part of the worker; the other tends to eliminate the worker altogether.

* * *

Some industries, such as those engaged in manufacturing, depend upon both technics and organization; others, such as merchandising, are largely concerned with organization. Probably the most outstanding example of the first is the manufacture of the automobile, and of the second, the chain store. If we compare the automobile of today with that of ten or fifteen years ago, the effect of efficiency in production will be at once apparent and there is no gainsaying but that the chain store is more efficient than the old corner grocery. It is cleaner, with its goods more attractively displayed; cheap-

er, owing to the economy effected by organization. It has, however, transformed independent citizens into employes and thousands of grocers have been entirely eliminated from the business.

Technics has had the effect of eliminating men from the highly mechanized industries. The invention of the electric clock with its synchronizing motor (not made by clockmakers at all) has eliminated multitudes of skilled clockmakers. In other words, technics has had the effect of eliminating skilled, and turning them, where they are employed at all, into unskilled workers.

One effect of both technics and organization is to eliminate the human element in industry, not entirely, but to the extent that today millions have been thrown out of employment with no prospect for the future.

The socializing process, wherever applied, calls for organization, which in turn means economy and diminished employment of the human element. This article must not be construed as unalterably opposed to the principle. It is not. There are certain services that are best performed by the state, among them primary and secondary education, and yet we have it on good authority that 3,500 teachers in this state have been thrown out of employment during the past five years, the operation of public utilities is another matter which may be performed by the state with advantage, inasmuch as private corporations tend to operate them, with all the evils of a monopoly.

* * *

We are led to wonder how the medical profession by and large would be affected by organization into groups about a medical center. Such organization process could be carried on doubtless with greater efficiency with the doctor an employe of an organization. Possibly the quality of the service rendered might be as good as any one could wish. Probably not. This is a matter of opinion which we will not offer. But what about the number of physicians who would not be required? The medical profession of the United States have been accused of resisting progress, a charge, however, that cannot be substantiated when we consider the high standards of American Medicine. Besides, the members of the profession as a whole have never shown a lack of social responsibility. Is the thing they are accused of resisting, really progress? Do they not feel that their very existence is being threatened? Or is it possible that they

fear that the introduction of any arrangement whereby they do not entirely control their work will subject them to bureaucratic domination?

There is a feeling among a great many members of the medical profession that the demand for socialized medicine, or whatever it may be called, is the work of propagandists financed by men of wealth with ill-advised philanthropic motives. It would be well if too much were not taken for granted, however, and a first hand investigation were made by the medical profession itself. Any demand for a change in the kind of medical care available should come from the people themselves. They should not be "educated" (we use the term advisedly) to demand a change. However, it is the duty of the medical profession to ascertain the will of the people and to endeavor to meet their wishes, where reasonable and possible.

Humanity by and large usually obtains what it really wants, but not necessarily by special legislation. It wanted temperance. It was given prohibition, which, after a trial, was rejected. Yet, who in his serious moments will not agree that civilization wants temperance as much as ever? The New Era demands that there must be a greater distribution of those basic comforts which are necessary to live before one can live well. Rugged individualism is losing the importance it once held. Over three-quarters of a century ago, Tennyson, with prophetic vision, wrote, "The individual withers and the World is more and more." Every physician as well as every other thoughtful person realizes this. What he objects to is that any doctrinaire formula should be foisted on him as a panacea. Legislation must be the outcome of the needs of the people. It must not be in advance of their thinking in mass. Such has been the development of common law. It has, in every age, reflected the customs and bona fide needs of the people.

* * *

If efficiency, however, is to mean the greatest possible accomplishment with the minimum of human effort, is it not possible that efficiency carried to the extreme may defeat its own ends, namely, service? In such an event, who can afford that service? Insecurity breeds fear. Independence, even though it is independence at a level that does not look to opulence, produces a contented mental state, and is not a contented people the greatest asset a nation can possess?

A MOMENT OF MEDICAL HISTORY

W. T. D.

COMMON SURGICAL INSTRUMENTS*

The oldest mechanical aids of the healing art are surgical instruments. Probably all groups of mankind have used them, and many types of instruments are known. In their pattern and construction, they indicate the ingenuity of their users and reflect the extent of surgical knowledge at different periods.

Concerning the origin of the earlier surgical instruments, we have no knowledge. It seems likely, however, that they appeared as modifications of the household or hunting implements of primitive man. Of the old Stone Age artefacts which remain, all are of such durable materials as bone and stone. Among the oldest of the finds are cutting or scraping edges and pointed chips. Finer technics of working stone in the later Stone Age periods resulted in instruments not only of greater precision, but also of more varied patterns. It is difficult to reconstruct the uses to which certain of these were adapted. Trephined and cauterized skulls indicate that surgery was practiced, though absolute identification of the instruments used is not possible. It seems certain that the predecessors of the modern surgical knife, lancet and saw must have had their origin in the flint and bone tools of prehistoric time.

Among the primitive people of today or of the more recent past, the Australian, the African Negro, the Eskimo and the American Indian have been living in Stone Age conditions. In addition to the cutting and scraping tools of quartz, flint, obsidian and bone, implements provided in the natural state by the environment were used. Knives were made of shell or fire-hardened wood. Needles were known and were made of thorns, cactus spines or bone splinters. Splinters of bone or the teeth of animals served as perforating instruments, while such materials as horn, wood and reeds entered into the construction of probes and

cannulae. Glowing coals from a fire provided a cautery. Though the surgical armamentarium of the prehistoric man may have been as extensive as that of more recent people, only the imperishable cutting implements have remained.

The transition from Stone Age implements to those made of metal is known to us, both from the Aztecs and Incas at the time of their first contact with white civilization and from the early Egyptians. In each of these cases, the early bronze tools bore a resemblance to those made from stone. The change in material, however, permitted tools to be lighter and to be more easily hafted. The earliest bronze or copper surgical tools known are knives and tweezers. Though the latter are known to us only as metal instruments, they may have been preceded by some sort of non-metallic tool which has not persisted.

Written records indicate that the Egyptians and also the Jews of the early Biblical period used sharpened stones for performing the operation of circumcision, and the use of stone instruments was continued as a ceremonial custom, even after bronze instruments came into use. Our precise knowledge of surgical instruments, however, begins with the Egyptians and Babylonians of four thousand years ago. Incised reliefs on the walls of Egyptian temples reveal pictures of a number of surgical instruments, while a few actual bronze instruments have persisted to the present. These show that the general development was considerably advanced at that time. Such copper or bronze instruments as knives, forceps, chisels, drills, probes, hooks and needles were admirably adapted to the simpler types of surgical procedure. The knives were particularly well constructed. Both the simply ornamented straight or hooked handles and the well formed curved or straight blades molded from a single piece of bronze were as adequate for surgical purposes as any prior to the nineteenth century. The ancient Hindus, according to the sacred books of India and the later accounts of Susruta, had evolved metal instruments of similar precision.

There was no abrupt transition in pattern from the early metal instruments to those of the Graeco-Roman period. Though the Greeks, since Homeric days, had been familiar with iron and even steel in the construction of tools, the tradition of making

*Historical contribution on methods and devices that have aided in the evolution of the science and art of Medicine and Surgery.

surgical instruments of bronze persisted. Varying properties of hardness and color were given to the hand-forged instruments by the addition to copper of small amounts (less than 15 per cent) of tin, zinc or lead. Other materials, such as silver, lead, bone or flint, were very rarely used. Iron was the material ordinarily used in the cautery, one of the most common of surgical implements. Iron and steel were likewise used in the blades of surgical knives, but, when so utilized, the blade of the knife was inserted into a handle of bronze which itself bore some resemblance to the shape of a knife blade. A bronze handle of such a shape attached to a steel blade apparently preserved for the implement the curative virtues which the ancients thought resided in the bronze material. It also served as a blunt dissector.

Two instruments were frequently combined as one. In addition to the knives with handles for blunt dissection, probes were frequently devised with one end blunt and the other end sharpened. In some cases, the two extremities differed in character, having rounded knobs, olivary enlargements, notched ends or needle eyes. Frequently, one end of an instrument represented a probe while the other carried a small spoon used for measuring medicine, for retracting the edges of a wound, for cleaning wax from the ears or as a curette. Either in combined forms or as separate instruments, spatulæ, tongue depressors, eyed probes or grooved directors were common. Many types of surgical needles—straight, curved and slightly bent—cutting needles, three-cornered needles and round ones were in use. For grasping organs to be incised and for separating the edges of wounds, a variety of sharp or blunt hooks was employed. Many types of scalpels, bistouries and lancets date from the Graeco-Roman period. One of the most common scalpels was a pointed, single-edged instrument having a remarkably bellied or convex blade; others were straight or had upturned tips. Spear-shaped lancets were numerous and some were provided with guards to prevent phlebotomy incisions from being too deep. Bistouries were either blunt or pointed. Blades of varying sizes and lengths were adapted to such uses as lithotomy, the removal of polypi, surgery of the tonsil and of fistulæ. Such instruments were either all bronze or were steel with bronze handles.

Forceps and pincers of many types were available to the surgeon. Pincers were made by bending a single strip of metal till the two extremities were parallel or by dividing a piece of bronze by a saw cut in such manner as to produce the two blades of the pincers. The jaws were either broad or narrow, finely-toothed or pointed, and, depending upon shape, size or strength, were used for epilation, as polyps forceps or as a general grasping instrument. The jointed type of forceps was a common instrument which, according to its strength, could be used for extracting teeth, for work on fractures or for extracting arrow heads and foreign bodies. Though scissors were known in ancient times, they do not seem to have been used in surgery, their place being taken by instruments similar in shape to sheep-shears. The saws in use were small, knife-shaped, toothed instruments suitable only for minor amputations and for work on bony splinters. Bone drills consisted of a rod of bronze having a toothed auger at one extremity. When a leather bowstring was looped around the drill, the latter could be rotated by saw-like movements on the bow.

Among the other instruments which are known from the Graeco-Roman period, both from actual specimens recovered from ancient graves and from descriptions by Greek writers, are elevators for raising depressed fragments of bone, needle holders, cannulæ, tonsillotomes, cataract needles, vaginal and rectal speculæ, catheters, syringes, aspirators, cranioclasts, dental instruments and bleeding cups. The instruments were well-balanced and were as light and slender as the strength of the material allowed. When instruments were jointed, the juncture was similar to the aseptic joint of today. The ornamentation, though limited to circular rings or spiral grooves on handles, was effective. The instruments were too small for major amputations and were not adapted to certain types of abdominal surgery, though they do indicate that a wide variety of surgical procedures was handled—blood letting, the lancing of abscesses, the removal of tumors and the treatment of fractures and hernia. The many types of forceps and knives which are known assure us that specific tools were devised for such special fields as surgery of the eye, nasal cavity, mouth, rectum and genito-urinary tract.

As the Roman period gave way to the

Byzantine and finally to the period of Arabian intellectual dominance, surgery became a minor field in medicine and a socially inferior occupation. In the early eleventh century, the Moorish physician, Albucasis, attempted to make Arabian surgery as effective as that of the Greeks, and our knowledge of Arabian instruments is derived almost entirely from illustrations by Albucasis. The actual iron instruments of the Arabs have not withstood rusting, though similar instruments are not unknown among modern Arabian folk physicians. Forceps, knives and saws underwent minor modifications in form, and scissors rather than shears were used as cutting instruments. Triangular and curved knife blades peculiar to the Mohammedans supplanted, in many cases, the more efficient shapes of the Graeco-Roman instruments. A bizarre Islamic pattern replaced simple ornamentation. In general, it appears that the Arabian physicians adopted the pattern of Graeco-Roman instruments, modified them in countless minor ways, but made no essential advance either in designing old instruments or in inventing new ones.

With the transfer of Greek and Arabian medical knowledge to southern Europe in the eleventh to thirteenth centuries, attempts were made to devise surgical instruments similar to those of the Greeks and Arabs. Iron was the chief material used. During this period, the surgeon was considered inferior to the physician, as he had been among the Arabs. Most surgery, in fact, was performed by barbers, who were employed chiefly for bloodletting. The armamentarium of the barber surgeon was modified by three influences: the artistic Renaissance, the invention of firearms and the increasing knowledge of anatomy. Renaissance craftsmen adorned instruments with carvings and with elaborate ornamentation. Ivory handles and gilt decorations were added to instruments, making them difficult to clean, but not increasing their efficiency. The use of firearms created a new surgical problem in the removal of musket balls and in the treatment of shattered members. In place of the small saws of the ancients, larger bow saws of a sort used for centuries by carpenters became important in major amputation. The increasing knowledge of anatomy during the fifteenth and sixteenth centuries led the way toward increasingly daring operations. A great variety of high-

ly ornamented instruments thus came into use. The trephine drill, instead of being operated by a bow, was adapted to a brace similar to that used now by carpenters. The ligation of arteries by Paré led to the use of trajectory for lifting the artery into view for ligation. Occasionally, forceps were used for this purpose, particularly one known as the *bec de corbeau* (crow's beak).

The seventeenth century saw the introduction of the trocar and the tourniquet bandage as well as instruments for the extraction of bullets. The screw tourniquet of Petit came into use in the eighteenth century as did the aneurism needle. At this time, phlebotomy was the vogue and many phlebotomes, including even automatic lancets, came into temporary use. A wide assortment of standard instruments was now available. Knives, scissors and forceps were made in various sizes, were curved, angled or straight, were pointed or blunt and were adapted to dozens of special uses.

By the mid-eighteenth century, barber surgeons were succeeded by medically trained surgeons. A multiplicity of surgical instruments for use in special operations on the eye, urinary tract, trachea and abdomen was devised. By the nineteenth century, the excessive ornamentation characteristic of the post-renaissance period was rarely evident.

Early in the nineteenth century, three advances were made in the manufacture of surgical instruments. An alloy of copper, nickel and zinc known as German silver was introduced in 1830, and this became used in the manufacture of surgical instruments shortly afterwards. In 1837, the electro-deposition of nickel and other metals by the long continued action of electric current was discovered, and before the middle of the century, a number of practical processes for nickel-plating instruments arose. The discovery of the vulcanizing of rubber in 1839 rendered an almost unknown material of tremendous importance both in the production of flexible instruments, such as the elastic tourniquet and rubber catheters, and in the utilization of hard rubber handles on instruments.

The discovery of general surgical anesthesia in 1844 decreased the difficulties of the surgeon and allowed a greater variety of surgical procedure, as did the development of antiseptic surgery after 1865. This latter development revolutionized the manu-

fracture of surgical instruments by requiring that they be easily sterilized. Nickel-plated instruments forged of one piece of steel came to supplant those having wooden or ivory handles with cross-hatched or ornamented surfaces. Saws were constructed of one piece and simplicity in construction became the keynote of surgical instrument manufacture. A few years before the development of antiseptic surgery, articulated scissors and forceps which could be separated at their pivot had been devised. The chain saw and the circular saw also came into use at this time. In 1850, the *écraseur* was invented by Chassaignac. During the latter half of the nineteenth century, the electrical current became adapted to surgical purposes, first as the galvano-cautery and later associated with the surgical motor and a group of specialized instruments.

Since the middle of the eighteenth century, pincers which could be locked by a catch had been occasionally used. The French surgeon, Péan, in 1874, devised forceps with narrow grooved blades and a catch near the handle, a modification of the older bullet extracting and *bec de corbeau* forceps. These he used to clamp bleeding vessels, leaving the clamps in place for a few minutes to several days till the vessel no longer bled. Thus he avoided the use of the ligature. The hemostatic forceps have become indispensable, though Péan's original method has been supplanted by the practice of ligating vessels which have been clamped temporarily by hemostats. In place of hooks for separating the edges of an incision, large shiny metal retractors capable of reflecting light into a wound, and, in the present century, self-locking retractors became common. About 1913, safety razor blades began to be used for making surgical incisions and this practice led to the manufacture of scalpels with detachable, ready sharpened blades.

The modern surgeon may obtain a bewildering number of surgical instruments devised for practically any conceivable procedure. Those, however, which make up the armamentarium of any surgeon, regardless of his specialty—the common instruments—are mostly very old in their fundamental design. Countless ages have molded them into efficient shapes and the best craftsmanship and materials of the century make them dependable.

HEALTH INSURANCE IN GREAT BRITAIN

"In discussing national health insurance," Dr. G. C. Anderson, Medical Secretary of the British Medical Association, said: "We face a disagreement at the outset. What we in Great Britain term 'medico-sociology,' the Americans call 'medical economics' and I am by no means sure the two are synonymous.

"We are inclined to think that the atmosphere over there is too highly charged with personal antagonism for the calm elucidation of truth. It seems quite evident, too, that the opponents of a health insurance plan fail to distinguish between 'sociology' and 'socialism.'

"Soon or late, I predict, every modern civilized community must acknowledge its duty to make provision for the health of its members if they cannot secure it for themselves. In America and elsewhere, there are large numbers who suffer from this disability.

"I think that, after twenty-two years, we may be said to have passed the experimental stage in Great Britain and are able to evaluate the merits and defects of our health insurance plan. That it has some defects may be freely admitted, but they are emphatically not those which the A. M. A. has thrust into the foreground.

"Chiefly, the A. M. A. and its members who oppose national health insurance allege that it has proved to be a failure and detrimental to the interests of both profession and public. It is said that the so-called 'panel system' has tended to stifle initiative and reduce all professional service to the same level of mediocrity.

"Nothing could be farther from the truth. In the first place, only about 17,000,000 persons, say one-fourth of our total population, are insured. No one earning more than the equivalent of \$1,250 a year may participate. Nor does the act yet extend to the dependents of the insured. That leaves a vast number of possible patients for those physicians who do not elect to serve under the panel system.

"In the second place, perfect freedom of choice—on the part of the patient to choose his doctor and the doctor to accept or decline insured persons—would guarantee against any 'stifling' of initiative. Those medical men interested purely in research or in the specialties simply follow their practice and do not apply for service on the panel. Harley street and all it stands for is not affected.

"As a matter of fact, most of our physicians are eager for panel service. The monetary return per patient may not be great but it has meant a continuing income, especially during a period of depression, for many general practitioners in the harder-hit areas. Without such steady income, many would have found it difficult to earn a living by the exercise of their profession alone.

"From the viewpoint of the public, the insurance act has been equally successful and any attempt to represent it as being otherwise proceeds from a misapprehension of the facts. When the Lloyd George government proposed the plan in 1912, there was violent opposition both by profession and public. Nobody wanted it.

"Employees and employers who were together to defray the cost by purchasing weekly stamps and affixing them in the insurance books, were vociferous in their protests. Some witty manufacturer put on the market a highly popular little stamp moistener in the form of a china bust of Lloyd George with a moist sponge for a tongue!

"All that is in the past, now. Even in a time of depression, with those who are working receiving considerably lowered wages, there are no protests. The benefits of the scheme are evident to the public and the public pays its share cheerfully.

"The allegation that the British medical profession is dissatisfied with the operation of the act is completely refuted by official resolutions of the B. M. A. and the Conference of Panel Committees which were unanimously adopted several years ago and have been reiterated from time to time. The sentiment has been repeatedly expressed that the benefits resulting from the act have been sufficient to warrant its continuance and improvement. The profession now favors its extension to include all dependents of the insured workers. It holds, too, that the Poor Law domiciliary service should be merged into the national health insurance scheme.

"It is somewhat amusing to recall the contention of the A. M. A. that the changes proposed for America are 'socialistic' and therefore objectionable. Amusing, because in this country the profession regards compulsory contributory insurance as a bulwark against the really socialistic movement to provide advice and treatment by means of a whole-time salaried service!

"As we understand the situation over there, the A. M. A. considers the present state of medical service to be reasonably satisfactory or, at least, is shortly to become so by the action of the medical profession itself. Were this true, there would scarcely be heard the increasing clamor for a change. Nor is the profession demonstrating that it is correcting or is about to correct the deficiencies proved to exist.

"When national health insurance was first proposed for Great Britain, the medical profession was outspoken in its opposition, just as is the A. M. A. and those for whom it elects to speak.

"But we quickly found it wise to change our tactics. The measure seemed inevitable and we resolved to get behind it, counselling with the government and seeing to it that several vital principles were incorporated in order to protect the interests of the profession and public. We found the government then and since always amenable to reason. The act has been modified from time to time but the approval for the amendments was always sought from the medical men themselves.

"The British system has some defects, to be sure. Perhaps the chief difficulty to satisfactory administration will never arise in America. You may start to build from the ground up. But here, we had to deal with a number of long established private insurance societies which could not be swept out of existence. These had to be incorporated into the scheme and are known as the 'approved societies' through which the act is largely administered. The machinery is thus rendered awkward and clumsy.

"Experience has indicated the foundation principles on which any plan of national health insurance should be erected.

"First, I should say, any scheme for the provision of medical advice and treatment should be separated as completely as possible from insurance provisions for cash payments of any kind, to insured persons.

"Second, provision for a full medical service—including the specialties and institutional care—and not limited to the general practitioner, as in Great Britain, should be made.

"Third, the right of all medical practitioners to be members of the service should be secured.

"Fourth, there should be no interference between doctor and patient when once this relationship has been brought about.

"Fifth, the profession itself should be given an appropriate part in the administration of the plan and such administration should be through topographical organizations, not through a multiplicity of 'approved societies.'

"These seem to us to be the essential bases for a workable plan, though other considerations readily suggest themselves: attention to the prevention of

disease as well as to the relief of individual sufferers; the inclusion of every individual in the community as a beneficiary of the measure; the incorporation of all ancillary services, including dental care.

"Many of these measures still are to be incorporated into the British system. It would be foolish as well as futile to assert that we are thoroughly satisfied with the present act and its administration in every detail. But we are certainly convinced of the wisdom of pioneering in the field of medico-socialology and believe that, in the course of two decades, despite the handicaps of war and depression we have taken several mighty strides toward the attainment of our goal.

"An individual or organization which misrepresents this attitude is either ignorant of, or maliciously blind to, the facts."

Interview which appeared in the
Detroit News, September 29, 1934.

Will it be rugged individualism or ragged collectivism? We've taken better care of the idiot than we have of the genius. We have coddled the moron and starved the intelligent. Those with the divine spark we have neglected, while we have lavished money and training upon the pinheads. Social legislation begs the unfit to become more unfit and cordially invites the fit to stop the struggle and vegetate.

G. B. CUTTEN,
President of Colgate University.

BRIGHT'S DISEASE

Doctor Richard Bright* of Guy's
Had several patients large in size.
Their legs were swollen as could be;
Their eyes so puffed they could not see.
To this edema Bright objected,
And so he had them venesected.
He took a teaspoon by the handle,
Held it above a tallow candle,
And boiled some urine o'er the flame
(As you or I might do the same).
To his surprise, we find it stated,
The urine was coagulated.
Alas, his dropsied patients died.
Our thoughtful doctor looked inside:
He found their kidneys large and white,
The capsules were adherent quite.
So that is why the name of Bright is
Associated with nephritis.

*Round the Fountain
Disrespectful Ditties*

SANTA CLAES

Come a' ye chaps wha's crazy wi' materialistic stuff,
Yer fu' o' dough that's sordid, an' yer a'ways in a
huff,
Yer temper's like a storm o' wind, nae matter how
it blows,
Bit, in spite o' a' yer grum'lin', there is a Santa
Claus.

Then come, ye grouchy sinners, that's i' sic aw'fu'
mood,
Buy oop a turkey dinner, it's fine auld Christmas
food,
Hang oop yer stockin' by th' lum, hae yer candles a'
ablaze,
Gi' th' bairns a' some fun—there is a Santa Claes.
Aye—there is a Santa Claes.

WEELUM

*Dr. Richard Bright was born in Bristol, England, in 1789. He located in London, where he was a member of the staff of Guy's Hospital. His work on the kidney is well known.

DEPARTMENT OF SOCIETY ACTIVITY

ARTICLE 2—PURPOSE

Section 1. The purposes of this Society are to promote the science and art of medicine, the protection of public health and the betterment of the Medical Profession; and to unite with similar organizations in other States and Territories of the United States to form the American Medical Association.

CHRISTMAS 1934

Another Christmas approaches and your officers join in wishing each fellow member, each reader of this JOURNAL, a day of joyousness with family and friends.

The New Year follows close. We are no soothsayer and the bravest must hesitate to predict what this new year, with its unusual and special problems, social and financial, will bring forth.

We may look back, however, at the year just past, with a degree of satisfaction. From many quarters came, at the beginning of the year, most gloomy forebodings. These have not come to pass. Today the pessimists are fewer in number and less vociferous. Our organization is intact. We are financially in better shape. The *esprit de corps* has been maintained. The individual doctor has happily adjusted himself, for the most part, to the changing conditions. He has, as always, given of himself largely in the care of his distressed patients, but chaos has given way to system and there has been less actual suffering among his clientele for the lack of food or clothing.

When one considers the magnitude and complexity of the problem it must be conceded that the state committee for the FERA has handled the job surprisingly well. Doctors throughout the state have been at great pains to cooperate, and on the whole the medical service has been reasonably satisfactory to both the profession and the patient, a situation by no means universal throughout the nation.

We face the new year courageously. We are prepared to meet reasonable social changes even though they may vitally affect some of our traditions and our personal interests, if only they are truly to be for the general and distinct advantage of the citizens of our community and our state. But we are prepared, too, to vigorously protest injustice, ill advised, visionary medical-

social schemes should such present themselves.

But the serious problems may well be set aside for this brief holiday period. It is the time for renewing old friendships and for making new ones, for the enjoyment of family and fireside. Christmas is almost upon us—"PEACE ON EARTH, GOODWILL TO MEN."

To all of you GREETINGS and a MERRY CHRISTMAS.

POSTGRADUATE CLINICS AND CREDITS

Most satisfactory has been the response to the Clinics held weekly at the three centers now operating. There is general agreement that these are the best teaching Clinics ever presented out-state through the joint effort of the State Medical Society and the University of Michigan. The attendance has on each day taxed the accommodations available in each of the centers.

At the recent annual meeting, the Committee on Postgraduate Education recommended that credit be given for postgraduate attendance. What form this will take has not yet been decided. Meanwhile, will each attending member be good enough to send to Doctor Bruce memoranda of courses taken during the past four years other than in Ann Arbor and Detroit, of which we have record?

KENT COUNTY MEDICAL SOCIETY'S PLAN RECOGNIZED

In 1932 the Public Relations Committee of the Kent County Medical Society, after a thorough fact-finding study of local conditions, proposed a plan for equitable community and professional participation under the title "Community Responsibility in Providing Adequate Medical and Hospital Care for the Indigent and Reducing the Cost of

Such Care for Persons in the Lower Earning Brackets."

The Society failed in its effort to "sell" the plan to the community, but no good work is ever lost, as the following letter indicates:

District of Columbia
Health & Hospital Council
November 12, 1934.

Michigan State Medical Society,
Grand Rapids, Michigan.

Gentlemen:

You will be particularly interested to note that effective January 1 a plan involving many of the essential elements contained in the Report of the Public Relations Committee of the Kent County Medical Society as of April, 1932, will be inaugurated in Washington, D. C.

A Central Admitting and Medical Service Bureau will go into operation on January 1. The plan is intended to be all-inclusive in scope and handles all indigent or part-pay cases, whether they be financed by public agencies, which is the Department of Public Welfare, or the Community Chest. I have succeeded in having the Community Chest finance the plan for one year.

A Supervising Committee, which controls the policy and operation of the Central Bureau, consists of four members of the Executive Committee of the Community Chest, a representative of the Hospital Superintendents Association, a Director of Public Welfare of the District of Columbia, a member of the District of Columbia Dental Society chosen by that Society and eight members of the District of Columbia Medical Society chosen by that Society.

I am particularly anxious at this time to secure twenty-five copies of the Report of the Public Relations Committee of the Kent County Medical Society. We will be pleased to pay for these copies if any expense is involved in obtaining them.

We are rushing the details of organization through and it is highly essential that the above mentioned copies be obtained as quickly as possible. Your coöperation will be greatly appreciated and we shall be happy to reciprocate in the future.

Sincerely yours,

(Signed) ROSS GARRETT, Coördinator.

"DOCTORS, DOLLARS, AND DISEASE"

A radio program presented Monday nights, WABC chain, by the National Advisory Council on Radio in Education. This organization is officially non-commercial and non-partisan, but the latter cannot be said of its Public Health Committee, which is responsible for this program. The American Medical Association sees in the personnel of this latter committee the Majority Committee on the Cost of Medical Care and looks upon the program as sheer propaganda for the socialization of medicine.

An editorial in the October 27 *Journal of the American Medical Association* says of the speakers, "It calls the roll of agitators from the Committee on the Cost of Medical Care." Listen in! They are no amateurs,

these speakers, and from these talks you may definitely determine whether there is a real need for defensive action. It will be to our advantage if, through these broadcasts, we discover that there are certain weak points in our line of defense. At any rate, listen in! The speakers are men and women of reputation. They represent various groups whose influence may have a distinct bearing on the future of the medical profession and by listening we may decide for ourselves whether the concern of the American Medical Association is justified.

THE CHOICE

The real reason why organized medicine in Great Britain and the great percentage of the population now express more or less of approval of insurance is because it is now an accomplished fact.

The nation has now progressed too far along the road. There is no turning back. The United States is not now where England stood in 1911. It is in a far more favorable position to choose the road it will follow. It has developed methods of meeting the problems of medical care that are far in advance of those existing in England at that time.

We can still choose, but we must choose the road we will take and, having chosen, we must follow it: After the choice is made and institutions established, vested interests are created and political forces set in motion. It is then extremely difficult, if not impossible, to reverse the direction of the movement.

We must face the fact that if we enter upon this road there is little if any reason to believe that we can avoid the evils and take only the good of health insurance.

If we decide to take the other road, to continue the practice of medical principles which have proved their value through so many centuries and to develop into an organized whole all the resources of private and institutional medical facilities and public and preventive medicine, we will have before us all the possibilities of flexible growth and development which are closed to us if we enter upon the closely walled road of insurance institutions.

If the medical profession of the United States intends to hold fast to its resolution to maintain for its prime object the services it can render to humanity, it cannot choose

a road for itself—the road it chooses over which to carry medical care to humanity must be traveled by human individuals as well as the medical profession. That road should then be sufficiently open and broad to serve the best interests of those for whom it is built—the people and their physicians.

—From a paper by Dr. R. G. Leland before Secretaries' Conference at Chicago in September.

CONFERENCE ON BLINDNESS

The Annual Conference of the National Society for the Prevention of Blindness will be held in New York City December 6-8, it is announced by Lewis H. Carris, Managing Director.

Dr. Edward Jackson of Denver, Colo., dean of American ophthalmologists, will deliver the principal address on the subject, "A Wide Basis for Blindness Prevention."

Among the topics that will come up for discussion at the Conference will be: the causes of blindness; sight-saving classes for children with seriously defective vision; prevention of eye accidents; and prevention of pre-natal infections which may cause blindness.

CANCER SURVEY

The following letter has been received from the American Society for the Control of Cancer:

Dear Doctor Corbus:

I presented your letter of October 17, addressed to Doctor Rector, at the meeting of the Executive Committee last night. I am glad to say that the Committee voted to authorize Doctor Rector to make a cancer survey of the State of Michigan. I am asking Doctor Rector whenever opportunity occurs to get in touch with you concerning the time at which he will begin the survey. He is, of course, very much occupied with other work so that I cannot tell definitely when he will be free to begin the survey. I am very pleased that your Society has asked for this survey and am very glad that ours can make it.

Sincerely yours,

C. C. LITTLE,
Managing Director.

MUSKEGON COUNTY MEDICAL SOCIETY comes to the post first with practically 100 per cent paid membership dues for 1935. For the second year this society carries the honor. Hail, Muskegon County!

COUNTY SOCIETIES

Eaton County

The Eaton County Medical Society met at The Carnes-Tavern Hotel, Charlotte, September 20. Dinner was served at 6:30 P. M. and was followed by a business meeting. Dr. A. G. Sheets, acting chairman, in the absence of the president and vice president, led a short business meeting in which were discussed many problems of primary importance to the physicians of this county.

Dr. Sheets gave a report of the meeting of the Delegates of the Michigan State Medical Society at Battle Creek on September 11. Dr. C. D. Huber,

chairman of the Medical Auditing Committee, reported that medical welfare had risen from 4 per cent of the total welfare in January to 8 per cent in July, 1934.

The regular order of business was resumed.

The meeting was then given over to a review of the progress made in health preservation and promotion during the past year and to discussion of plans for health advancement in the future.

The discussion of accomplishments and plans was led by Dr. Joseph W. Davis, director of the county health unit, which is one of five supported by the W. K. Kellogg Foundation. In it the director acts only as a coordinator and stimulator of community health activities. The medical profession takes a leading part both in planning and in carrying out the program. The report of progress made during the past year indicated that a county health unit of this type can be efficient.

It was moved, supported, and carried that the report be accepted.

The meeting was adjourned.

JOHN LAWTHOR, *Secretary*.

Shiawassee County

After a vacation of two months, Shiawassee County Medical Society began its regular monthly meeting with a noon luncheon at Owosso Memorial Hospital, September 20, 1934. There were twenty-three physicians present.

After a short business session President W. M. Taylor called on Dr. I. W. Greene, delegate from this society to the State Society which met at Battle Creek last week. Dr. Greene gave an excellent report of the proceedings of the House of Delegates, which was very interesting to all present.

Application for membership having been passed upon favorably by the Board of Directors, Dr. J. P. Flanders, of Laingsburg, was elected to membership. Plans are being made by the program committee for some very interesting meetings for the coming fall and winter.

W. E. WARD, *Secretary-Treasurer*.

St. Clair County

A regular meeting of St. Clair County Medical Society was held Tuesday, October 2, 1934, at the Harrington Hotel, Port Huron, Michigan.

Supper was served at 6:30 P. M. to twenty members, and at the time President Armsbury called the meeting to order at 7:50 P. M. twenty-six members were present.

Regular business was dispensed with by order of the Chair. Dr. Heavenrich, District Councillor, stated that the next meeting would be held October 16, 1934, at the home of Dr. J. M. Robb in Grosse Pointe, at which time the Society would be the guests of Dr. and Mrs. Robb at a buffet dinner at 6:30 P. M. and that after the dinner Dr. Robb would address the meeting, speaking on "Asthma." The president asked how many present would attend this meeting and seventeen signified their intention to do so.

Dr. Thomas brought up the subject of renewing our efforts to have the new hospital finished and requested the members of the Society to try to pay up their pledges. It was believed by those present that the time was inopportune to begin a drive in the city for payment of the pledges of citizens. Dr. Heavenrich stated that the Society should hold a joint meeting with the members of the City Commission in an attempt to have that body take over the new hospital so that a Federal loan might be obtained with which to complete the construction of the now unfinished building. No definite action was taken upon the matter.

Dr. Callery, Health Officer of Port Huron, stated

that the State Health Commissioner, Dr. Slemmons, had informed him a local physician was advising vaccination against typhoid and asked if anyone present had reported any typhoid or knew of any cases in the city. No affirmative replies were heard.

At the request of the Chair, Dr. Heavenrich then introduced the guest of the evening, Dr. William J. Cassidy of Detroit.

Doctor Cassidy spoke upon the subject, "Eccentricities of Splenic Disease and Injury: Diagnosis and Treatment." Dr. Cassidy emphasized many important points in his address. The discussion was opened by Dr. MacKenzie, who complimented the speaker upon the excellence of his address. Dr. Thomas also discussed the subject and reported several interesting cases.

Dr. Cassidy then closed the program in the usual manner. The meeting adjourned at ten P. M.

GEORGE M. KESL, *Secretary-Treasurer.*

WOMAN'S AUXILIARY, MICHIGAN STATE MEDICAL SOCIETY

MRS. F. T. ANDREWS, President, Kalamazoo.
MRS. F. M. DOYLE, Secretary, Kalamazoo.

Dear Auxiliary Members:

It is with a humble and contrite heart I enter into the duties of the office of your President.

We are still pioneers, blazing the trail, marking time.

The Medical Association has always been a scientific organization, fighting for the health of their fellowmen. It is to be hoped they will not have to enter other fields to bring health and happiness to their countrymen, but if the time comes, let it never be said, "The wives were not ready."

May Christmas and the New Year bring the dawn of a new day full of Hope, Love and Charity.

(Mrs. F. T.) CHARLOTTE ANDREWS.

"THAT WHICH HELPS" is the motto of our very capable and gracious National President, Mrs. Robert Tomlinson, of Wilmington, Delaware, who called a board meeting on September 22, at Chicago, Illinois.

Twenty-two members were present, including presidents from ten States.

Great plans are in the making for a joint convention for Canada and the United States.

MRS. F. T. ANDREWS, *President,*
Woman's Auxiliary to the Michigan State Medical Society.

JACKSON COUNTY

The first meeting of the Jackson County Auxiliary was held at the home of Dr. and Mrs. R. H. Nichols, in Leslie, October 16, 1934, with thirty-two members present.

After a lovely dinner at seven, the president, Mrs. Glen Hicks, called the meeting to order. An interesting report of the State Convention was given by the president, after which Mrs. E. S. Peterson, a delegate to the Convention and acting State Legisla-

tive Chairman, reported on numerous events not discussed by Mrs. Hicks.

Mrs. L. J. Harris, program chairman, presented each member with a printed program for the coming year. She then introduced Miss Olive Sewell, of Lansing, executive secretary of the Michigan State Nurses Association, who gave a very interesting talk on the Training Schools for Nurses, stating that the public at large is responsible for the nursing profession, that medical science has gone on rapidly but that the training of nurses has remained in the bath tub stage. She also emphasized the need of a broader educational program for nurses.

The Public Relations Committee plans to present Dr. Joseph Bloodgood, of Johns Hopkins, as guest speaker at the November meeting.

SAGINAW COUNTY

The Saginaw County Auxiliary met for luncheon and business at the Birss Tea Rooms on Friday, September 28, with twenty-eight members attending.

Following the luncheon, reports of the State Convention held in Battle-Creek were given by the President, Mrs. J. A. McLandress, and Mrs. J. H. Powers. Mrs. L. C. Harvie then discussed the program suggestions as outlined by the former State President, Mrs. Elmer L. Whitney, and her program committee.

It was voted to hold the Auxiliary meetings each month at the same time the Medical Society meets and to precede the social hour with a short educational program.

OBITUARY

Dr. Peter T. Grant

Dr. Peter T. Grant of Grand Rapids, Michigan, died at his home on July the sixteenth at the age of fifty-one years. Dr. Grant studied and received his Bachelor of Arts degree from Syracuse University in 1905, and his medical degree from Louisville in 1909. Two years after his graduation in medicine he married Miss Beatrice Bushaw, who with three daughters survives him. He began practice in Marengo, Indiana, where he remained until entering the medical corps of the United States Army, stationed near New York City. After his discharge from the Army he entered upon a year's post-graduate work in New York, after which he located in Grand Rapids. Following his residence in Grand Rapids, he spent a certain amount of time each year in post-graduate work either in United States or in Europe. Dr. Grant, besides being a member of Kent County Medical Society, Michigan State Medical Society and American Medical Association, was Vice-President of the Otolaryngological Society of Detroit, of the S. W. Michigan Triological Association, of the Grand Rapids Eye, Ear, Nose and Throat Society, of the American Academy of Ophthalmology and Otolaryngology. He had executive qualities of a high order. His mind was of a philosophical and reflective type. A friend writes to the effect that Dr. Grant was concerned with the purpose of life, summed up in the question, "What does it all mean?" He writes, "I believe he (Dr. Grant) would have us think seriously of life and its significance, less of theology and more of ethics, less of destiny and more of character, less of reward and more of service. Life to him was an opportunity and a responsibility."

Dr. Grant was chairman of the Eye, Ear, Nose, and Throat Section of the Michigan State Medical Society.

MICHIGAN'S DEPARTMENT OF HEALTH

C. C. SLEMONS, M.D., Dr.P.H., Commissioner, LANSING, MICHIGAN

ALUM PRECIPITATED TOXOID
FOR USE IN IMMUNIZATION
AGAINST DIPHTHERIA

The purpose of this paper is to give sufficient information about Alum Precipitated Toxoid that the reader may use the product with confidence and intelligence. Something of the history, the preparation, the testing, the method of use and the results obtained to date in Michigan with Alum Precipitated Toxoid will be given.

Alum Precipitated Toxoid immunizes against diphtheria over 90 per cent of susceptible children receiving a single injection of the product. The preparation of this product was first described by Glenny and his co-workers¹ in 1926. He found it to be a superior immunizing agent for guinea pigs. A publication by Glenny and Waddington² in 1928 verified their earlier work and in 1930 Glenny³ made the prophecy that probably in the future a suspension of toxoid precipitated by alum would be the favored agent for human immunization against diphtheria. In 1931 Glenny and Barr⁴ published a detailed study of the precipitation of toxoid with alum, describing the method of obtaining the best yield with the greatest purification.

The first use of Alum Precipitated Toxoid in the United States for immunization of children was described by Wells, Graham and Havens⁵ in 1932. They prepared the product according to Glenny's technic and verified his results on guinea pigs. Subsequent studies^{6,7} verified their earlier report and gave additional results on human immunization. McGinnes, Stebbins and Hart⁸ report excellent results in immunizing over 2,000 children with a single injection.

During the last two years detailed studies have been made on the use of Alum Precipitated Toxoid manufactured by the Michigan Department of Health.^{9,11}

These studies were made on children from Kent, Saginaw, Genesee, Ingham and Ottawa counties and conform in the excellent results obtained with the reported studies elsewhere.

Our studies on 588 children, 380 of pre-school age, all with positive Pre-Schick tests, gave a 98 per cent immunity—the interval between the immunization injection and the Pre-Schick test being sixty-five days.

Alum Precipitated Toxoid is prepared by the addition of a solution of pure alum to a potent diphtheria toxoid. A precipitate forms which contains most of the toxoid. This precipitate is washed, resuspended in physiologic saline solution and a preservative added. Aseptic technic must be used throughout.

All lots of Alum Precipitated Toxoid distributed under License from the National Institute of Health must be proved safe for human injection by passing tests demonstrating sterility, freedom from toxic or poisonous properties, and that less than 20 mgm. of alum per human immunizing dose is present. All

lots must also pass tests demonstrating a high immunizing potency, as measured by the response of guinea pigs to a single human dose.

There are four important points to be constantly borne in mind in using Alum Precipitated Toxoid for human immunization. They are:

1. Thoroughly re-suspend the precipitate by agitation before *each* injection. Only the precipitate immunizes, the supernatant confers no immunity.

2. If a vial of Alum Precipitated Toxoid is not used up on the same day on which it is opened, discard the remainder; do not use it another day. If a contamination was present due to the first day's use it would not be possible to detect this fact because of the precipitate present.

3. Give all injections of Alum Precipitated Toxoid *subcutaneously* and not intramuscularly. The slower absorption from a subcutaneous injection increases the antigenic response. Schmidt¹⁰ has demonstrated in guinea

pigs that a subcutaneous injection of Alum Precipitated Toxoid gives a much better antigenic stimulation than does an intramuscular injection.

4. Alum Precipitated Toxoid is of primary value in the immunization of children, and especially of that most important group, the pre-school children. All the available published data are based on children, and since the use of the prod-

uct on adults in Michigan gave disappointing results it would be wiser not to use it on adults until further studies have been made.

The explanation for the marked increase in the antigenicity of a toxoid which has been precipitated with alum has not been proved, but Glenny, etc.,¹² state that "the improvement following the addition of alum to toxoid . . . would appear mainly due to the relative insolubility of the precipitate." In other words, the slow absorption of the precipitate would give the effect of multiple stimuli over a considerable period of time. Another possibility is that the presence of the alum itself plays a part in the stimulation.

W. E. B.

REFERENCES

1. Glenny, A. T., Pope, E. G., Waddington, H., and Wallace, U.: Jour. Path. and Bact. 29:38, 1926.
2. Glenny, A. T., and Waddington, H.: Jour. Path. and Bact., 31:403, 1928.
3. Glenny, A. T.: Brit. Med. Jour., p. 244, (July-Dec.) 1930.
4. Glenny, A. T., and Barr, Mollie: Jour. Path. and Bact., 34:131, 1931.
5. Glenny, A. T., Buttle, G. A. H., and Stevens, Muriel F.: Jour. Path. and Bact., 34:267, 1931.
6. Graham, A. H., Murphree, L. R., and Gill, D. G.: Jour. A. M. A., 100:1096, 1933.
7. Havens, Leon C., and Wells, Dewey M.: Jour. Infect. Dis., 53:138, 1933.
8. McGinnes, Stebbins and Hart: Jour. Am. Pub. Health, 24:1141, 1934.
9. Newitt, A. W.: Unpublished data.
10. Schmidt, S.: C. rend. Soc. Biol., 106:765, 1931.
11. Shiffrin, Peter G.: Unpublished data.
12. Wells, Dewey M., Graham, Arthur H., and Havens, Leon C.: Am. Jour. Public Health, 22:648, 1931.

ALUM PRECIPITATED TOXOID
NOW READYOne Dose Immunization for Children
Under Ten YearsA Single Injection Will Immunize 98 Per Cent of
the Age Group 6 Months to 10 Years*The Product should be given Subcutaneously, not
Intramuscularly*Requests for This Product Will
be Filled in Order of ReceiptManufactured and Distributed by the
Michigan Department of Health Laboratories

COMMUNICATION

To the Editor of the Journal M.S.M.S.

I am writing you concerning a new organization which was formed in Calhoun County on Thursday night, November 15, known as the Allied Health Groups. The membership of this organization is restricted to Doctors, Dentists, Registered Nurses, and Pharmacists, all of whom must be in good standing in their respective associations to qualify.

In the light of recent events and particularly with the impending threat of so-called State Medicine, many of us have felt that organized medicine was not strong enough in itself to sway public opinion to the point of open objection against this encroachment by the State on a very important problem of all the public. While this was perhaps the main motive in starting this organization it has long been common knowledge that many laws have been wrongly or poorly enacted affecting these four groups and that many other laws should be passed for the general good of the public and also the professions involved.

We feel that the common interests of the public and professions can best be served by organized effort, independent of the limitations naturally imposed by the various scientific organizations to which the individual members belong. Naturally, any steps taken will be only those approved by the State Associations of Medicine, Dentistry, Nursing and Pharmacy, but action will be more aggressive and direct than any of these individual groups could or would care to advance. The list of officers elected at this meeting are as follows:

President, Joseph E. Rosenfeld, M.D.

First Vice President, Mr. Norman Freeman, Reg. Ph.

Second Vice President, H. J. Thorne, D.D.S.

Third Vice President, Miss Clara Gasser, R.N.

Secretary-Treasurer, Ignatz G. Uhrie, D.D.S.

Board of Directors:

A. T. Hafford, M.D.

Lawrence Heidenrich, D.D.S.

Miss Angela O'Neill, R.N.

Mr. Gerald Koons, Reg. Ph.

We also have in mind a program of education as regards health laws, this program to extend to public officials as well as the public itself.

As a matter of interest the *Battle Creek Evening News* last night wrote a splendid editorial, commending this movement and I am furnishing you with a copy of this. It is our hope that similar organizations to this will spring up in each county rapidly and that in every instance the local county medical society will unofficially sponsor the organization as it has done in Calhoun.

Believing this action will be of interest to the entire medical profession of this state, I am forwarding you these comments in the hope that they will be printed in the next issue of the State Journal.

JOSEPH E. ROSENFELD, M.D.

A GUIDE IS NEEDED*

Formation of the Allied Health Group, representing doctors, dentists, nurses and pharmacists, the purpose of which is to exercise a guiding hand in public health legislation, is a step which is important to the public as well as to the participating professions.

Certainly this is the group in which legislation re-

lating to public health should originate from lay sources, which have no experience of the professional questions pertaining to health.

Whatever legislation may be proposed to come from the representatives of which are trained to know and measurements of health. Surely doctors, dentists and pharmacists can express much more information on the subject than could a group and perhaps politically or selfishly inclined.

The widespread agitation which has in recent times for statutory regulation of medicine and its correlative professions emphasizes the need for the right kind of possible legislation. Otherwise, legislation would be detrimental to every individual might be enacted.

In the organization of this group professions are not only protecting themselves but also are protecting the public.

—From the *Battle Creek*

GENERAL NEWS ANNOUNCEMENT

Dr. Francis MacMillan of Detroit Morley, daughter of Mr. and Mrs. Morley of Detroit were married. She spent their honeymoon in Europe, thence to Vienna, where Dr. MacMillan was attending the clinics. Following the wedding the young couple went on a Mediterranean tour and returned to Detroit the second week of the month.

* * *

Harper Hospital, Detroit, cordially invites physicians to attend the Friday morning held each week from 9:00 until 12:00 in the amphitheater. The first hour of the clinical pathologic conference will be given by Dr. Plyn F. Morse. This is followed by a discussion of clinical cases by the heads of the departments in the hospital.

* * *

POSTGRADUATE MEDICAL AND THE NEEDS OF THE GENERAL PRACTITIONER is the title of the report of the subcommittee of the committee on the needs of the profession. It is a volume of 91 pages, double printed, the most exhaustive study of the needs of the profession ever made. Copies of the report may be procured by addressing the Secretary, Metz Building, Grand Rapids.

* * *

Application blanks are now available for the Scientific Exhibit at the Atlantic City Convention of the American Medical Association. The Committee on Scientific Exhibits requests that all applicants fill out the regular application blanks and requests that this be done as early as possible. Applications close February 25, 1934. Application blanks should be sent to the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago, Illinois.

*This is the editorial referred to in Dr. Rosenfeld's letter.

A VETERAN PSYCHOPATHIC HOSPITAL.
Mentally deficient veterans are housed in psychopathic wards and in jails and are permitted to walk the streets in Michigan because of inadequate facilities for caring for them, according to statements by Councilman Eugene I. van Antwerp, of Detroit, and Fred Beard, State welfare director for the Veterans of Foreign Wars. Van Antwerp is a member of the Disabled Veterans Committee in the State, and joined with Beard today in suggesting a veterans' hospital at Detroit. They pointed out that while the capacity at the Veterans' Hospital for Mental Cases at Camp Custer is 840 beds, less than 400 are available to veterans from Michigan, the hospital also caring for cases from Illinois, Indiana, Wisconsin and Minnesota. The capacity of the Marine Hospital at Detroit is only 240 beds. The State offers no general hospital facilities and veterans in need of surgical treatment must go to Dayton or Chicago.

PRIZE ESSAY

American Association for the Study of Goiter
November 1, 1934.
Michigan State Medical Journal,
Grand Rapids, Mich.
Gentlemen:

The American Association for the Study of Goiter again offers the Van Meter Prize Award of \$300 and two honorable mentions for the best essays on the subject of goiter provided they meet the standards of the award committee. The essays should be based on original research work on the subject of goiter, preferably its basic cause. The prize essay or its abridgment is to be presented at the annual meeting of the Association to be held in Salt Lake City, Utah, in June, 1935.

Competing manuscripts should be in the hands of the Corresponding Secretary, W. Blair Mosser, M.D., Kane, Pa., not later than April 1, 1935.

The first prize of \$300 for the 1934 meeting was awarded to M. A. B. Brazier, Ph.D., B.Sc., London, England, for her essay "The Impedance Angle Test for Thyrotoxicosis."

First honorable mention was awarded Prof. Ugo Cerletti, Genoa, Italy, for his essay "Three Years of Experimental Research in the Etiology of Endemic Goitre."

Second honorable mention was awarded D. Roy McCullagh, M.D., Cleveland Clinic, Cleveland, Ohio, for his essay "Studies in Blood Iodine using a New Chemical Method."

Sincerely yours,
W. BLAIR MOSSER, M.D.,
Corresponding Secretary.

THE MICHIGAN ASSOCIATION OF SCHOOL PHYSICIANS

The newly elected officers of The Michigan Association of School Physicians at the meeting of the Association at Lansing, November 8, are as follows: Dr. J. D. Sundwall, President; Dr. C. D. Barrett, Vice President; Dr. V. K. Volk, Secretary-Treasurer; Dr. Earl Kleinschmidt, Editor, and Dr. Wm. H. Pickett, Associate Editor. Additional members elected to the Executive Committee are Dr. B. M. Carey, Dr. G. M. Byington, and Dr. Don M. Gudakunst. Among the resolutions adopted by the Association are: (a) That all School Health workers be required to have annual physical examinations and include tuberculin tests and x-rays. (b) That all High School athletes be required to have tuberculin tests (and x-rays of the chest when indicated)

as a part of their annual physical examination requirements. (c) That the Michigan Association of School Physicians invite all State, County, and City teachers individually and by groups to assist in bringing about the enactment of suitable legislation requiring annual thorough physical examinations of teachers before the beginning of each school year. That the examination include tuberculin testing and x-ray. (d) That we endorse the activities of the State Tuberculosis Association and all affiliated county organizations in their efforts to control and prevent the spread of tuberculosis infection, and we urge the cooperation of the general public in the support of these activities through the liberal purchase of the Tuberculosis Association Christmas seals.

ANNUAL TUBERCULOSIS ASSOCIATION MEETING

The Michigan Tuberculosis Association, the Michigan Trudeau Society and the Michigan Sanatorium Association met in joint session in Ann Arbor, October 11. Dr. John Alexander and staff in the Thoracic Surgery Department at the University Hospital gave very instructive clinics at the hospital throughout the morning. A large number of physicians and laymen interested in the control of tuberculosis met at a noon luncheon where reports of the year's work were made and an address by Dr. Paul F. Voelker was heard. Dr. Voelker stressed the importance of more interest in health matters for school children and pointed out the need for the annual examination of school teachers for the detection of communicable diseases, especially tuberculosis.

With the assistance of the Michigan Tuberculosis Association 35,000 persons, mostly high school pupils, were tuberculin tested and over 7,000 x-rayed

THE JOURNAL

Do you want a fat JOURNAL?

We have on hand many excellent scientific papers. The editor can get as many more. Do you want to read them in your JOURNAL? You can if you want to. The number of pages of reading matter is largely dependent on the number of advertising pages. You can make the JOURNAL worth while to the advertiser. Here is an extract from a recent letter from a large advertising agency.

"Mr. M. who gave us the order for a full page is a believer in state medical journals and has other advertising pages if we can demonstrate advertising in your JOURNAL pays. Is there some way by which you can start inquiries? We would like the advertiser to know that somebody has seen and read his advertisement." You help the JOURNAL when you write the advertiser.

There are potential advertisers in your community. Among our members are a few, a very few, who have at times turned a neat sum in commissions by soliciting their acquaintances. We will give you every assistance.

during the past year. This uncovered 146 active adult type cases of tuberculosis and 1,147 childhood type. Of this latter group most of them are inactive but require careful observation at home. Most of the testing was done by local physicians, and over 1,200 were referred to their family physicians for advice and care.

The Trudeau Society conducted a symposium on collapse therapy in which most of the sanatoria of the state were represented, and use of these surgical measures was found to be bringing gratifying results by all those reporting.

At a conference in the evening the problem of tuberculosis among high school and college athletes was discussed and the need for more care in providing adequate examinations before allowing indulgence, particularly in competitive sports, was brought out. Dr. W. J. V. Deacon of the State Health Department reported statistically on tuberculosis hazards, indicating that women die in greatest numbers during young adult life, but men die in larger numbers in later adult life. The death rate from tuberculosis in Michigan has fallen from 94.7 deaths per 100,000 population in 1908 to 46.7 in 1933, Dr. Deacon reported.

The following officers for the Michigan Tuberculosis Association were elected for the coming year:

President—Dr. Bruce H. Douglas, Detroit.

First Vice-President—Dr. John Sundwall, Ann Arbor.

Second Vice-President—Mr. Curtis Wylie, Grand Rapids.

Treasurer—Mr. Harry Bennett, Lansing.

DR. LUCE WENT TO WASHINGTON

Dr. Henry A. Luce of Detroit responded to an invitation to attend the National Conference on Economic Security at Washington, November the fourteenth. Dr. Luce was invited as one of the leaders in discussion on the subject of Medical Care. Among other physicians invited in the same capacity were: Dr. Nathan B. VanEtten of New York City; Dr. George Follansbee of Cleveland. While prominent in organized medicine, none went as representative of any state or national medical association with which he is associated, but as an individual. The purpose of the meeting is to aid the President in the matter of effecting a certain degree of economic and social security, of which medical care may be construed as an important factor. Dr. Luce as one of the discussion leaders emphasized the importance of maintaining a high quality of medical service which he believed the medical profession of the United States aimed to give. He referred to the numerous methods adopted by various county societies to meet the situation of medical care on terms which the low income worker could afford to pay. He went into as much detail as time would permit, in regard to the intensive study of the subject by the Michigan State Medical Society through the Committee on Survey of Health Agencies, later by the Committee on Economics. He also expressed his assurance that the medical profession was willing at all times to cooperate in any movement for an improvement of the quality of medical service. Dr. Luce stated that at the convention the social workers and economists outnumbered members of the medical profession; however, he was favorably impressed with President Roosevelt's attitude towards the matter of social and economic security. The President was inclined to center his attention on one subject, namely, Unemployment Insurance. The matter of old age pension and of medical care would be postponed indefinitely. He spoke disparagingly of "organizations promoting

fantastic schemes which have aroused hopes which can not possibly be fulfilled." Regarding health insurance, while he had no immediate plan he was confident that whatever the future had to offer, nothing would be devised that would hinder the medical profession. Dr. Luce quoted from the President's address as follows:

"There is also the problem of economic loss due to sickness—a very serious matter for many families with and without incomes, and therefore an unfair burden upon the medical profession.

"Whether we come to this form of insurance sooner or later on, I am confident that we can devise a system which will enhance and not hinder the remarkable progress which has been made and is being made in the practice of the professions of medicine and surgery in the United States."

HIGHLAND PARK CLINIC

The Highland Park Physicians Club will hold their ninth annual Clinic, December 5, 1934, at the Highland Park General Hospital.

The following speakers are on the program:

Dr. Arthur H. Stillians, Chicago, Professor of Dermatology, Northwestern University—Subject: "Relationship of Dermatology to General Medicine."

Dr. Edward A. Morgan, Toronto, Pediatrician, the Hospital for Sick Children—Subject: "Cyanosis of the Newborn."

Dr. Edward J. Stieglitz, F.A.C.P., Chicago, Assistant Professor of Medicine, Rush Medical School—Subject: "Hypertension."

Dr. Thomas D. Allen, F.A.C.S., Chicago, Associate Professor of Ophthalmology, Rush Medical School—Subject: "Relationship of Ophthalmology to Medicine and Surgery."

Dr. C. R. G. Forrester, F.A.C.S., Chicago, Professor of Surgery, Loyola University—Subject: "Treatment of Fractures." (Movie Film.)

Dr. John Carmack, F.A.C.S., Indianapolis, Professor of Oto-Laryngology, Indiana University—Subject: "Otitis Media and Its Complications."

Dr. Arthur M. Mendenhall, F.A.C.S., Indianapolis, Professor of Obstetrics, Indiana University—Subject: "Newer Things in Obstetrics."

Dr. Ellis Fischel, F.A.C.S., St. Louis, Associate Professor of Surgery, St. Louis University—Subject: "Cancer of the Breast."

Dr. Russell L. Haden, F.A.C.P., Cleveland, Director Department of Internal Medicine, Cleveland Clinic—Subject: "Problems of Chronic Arthritis."

DR. HAVEN EMERSON ON THE FREE CLINIC

Dr. Haven Emerson of New York, who from April the nineteenth to June the twentieth, 1934, made a survey of out-patient clinics in the metropolitan area of Detroit, addressed an audience consisting of members of the medical profession and others, in Detroit on November the sixteenth. Dr. Emerson reviewed the clinical situation and claimed that half the cost of medical care went into hospitalization. He felt that certain economies might be effected by more systematic attention to the out-clinic patient while he was in the "vertical" position, whereby many might be restored to health so that they did not reach the "horizontal" stage. From ten to twelve per cent of hospital patients did not need the kind of care that a hospital was able to provide; they could be handled at less expense in convalescent homes. He went on to say the mortality, particularly of little children afflicted with pneumonia, was about half that in institutionalized patients. Detroit as a community he found contained on the whole

a younger population than that found in other communities of its size. There was also a preponderance of males. In the care of the sick he had found Detroit unevenly progressive, referring to the outpatient departments of various hospitals and clinics. The number of visits in a year was equal to the entire population of the city. This enormous number of visits was taken care of by physicians only 4.6 per cent of whom were paid at the rate of \$2.21 per hour. He estimates that on this basis the city received from the medical profession, at \$2.00 per hour, the sum of \$153,000 in free service from the 95.4 per cent of physicians who received no pay at all. He mentioned the enormous amount of medical time spent by physicians in which there was not even the compensation of experience. He believed that clinic physicians should be compensated for the time given, since in some cases it amounted to half of their professional day. Dr. Emerson went on to state that in his belief the patient was entitled to continuity of medical supervision, that is, if he went to private doctor, to clinic, or from clinic to hospital, there should be a complete report of his condition available from one service to the next. He felt that the independent clinic, so-called, was at a disadvantage compared with clinics with hospital affiliation. Speaking of the social worker, he said that some institutions were opposed to her services while others made use of the social worker. He favored the trained social worker, among whose duties, he felt, was that of investigating and eliminating the grafter of free medical service. He believed that the higher trained social worker could do a great deal to help the doctors and clinics, while he looked with disfavor upon the untrained social worker, who should be eliminated from the service.

FOOD HANDLERS AND TUBERCULOSIS

(MARY B. CAMPBELL, M.D., and
D. S. BRACHMAN, M.D.)

DETROIT

It is generally recognized that tuberculosis may be spread by food handlers. Because of this fact, Section 470 of the Public Acts of 1931 state, . . . "No person who is affected with an infectious disease, . . . shall work, or be permitted to work in any place, where cigars are manufactured or where food or drink is prepared, cooked, mixed, baked, exposed, bottled, packed, handled, stored, manufactured, offered for sale, or sold. Whenever required by any local health officer, any person employed in any such places shall submit to a physical examination by such officer, or by some physician designated by such health officer or by a physician regularly in the employ of the person or institution by whom the person to be examined is employed. If as a result of such examination, such person shall be found to be affected with any infectious disease . . . such employment shall immediately cease and such person shall not be permitted to work in any such place."

The case-finding unit of the Detroit Tuberculosis Sanatorium has been cooperating with the Wayne County Medical Society and the Detroit Department of Health in the food handlers' program. A supplementary activity to the active plan of the Department of Health was carried out with a group of 605 food handlers scattered in different sections of the city and which we feel would be a cross section for that occupation in this community. The results are very interesting and form the basis of practical recommendations for the health of all.

The procedure was as follows:

All the food handlers were given a tuberculin test (Pirquet).

(It should be emphasized that these workers

were not patients but actively engaged in a gainful occupation. They did not have any symptoms to our knowledge and went through the procedure feeling normally healthy.)

Two hundred and nine of the 605 workers reacted positive to the tuberculin test (34.5 per cent).

One hundred and ninety-nine food handlers (of which only twenty-five were males) were x-rayed, with the following results:

Adult type disease.....	5 (2.5% of those x-rayed)
Minimal Tbc.	1
Moderately advanced	3
Far advanced	1
Childhood type infection.....	3
Pleurisy	2
Observation	5

The five workers (all female) with adult type disease have been recommended for sanatorium care and arrangements made for admission.

The patients thus registered are investigated by the health authorities. All members of the household in which they live are strongly advised to have necessary tests to discover other possible cases of tuberculosis. These might have caused or perhaps been the result of contact with the 5 cases diagnosed by our case-finding unit.

Recommendations:

The regular physical examination of the chest for food handlers should be carried out as before.

A supplementary examination would be advisable in which all food handlers are given a tuberculin test, irrespective of presence or absence of abnormal symptoms or signs, general appearances, weight, contact history, etc.

All reacting positive to the skin test should be x-rayed.

RESUSCITATION

YANDELL HENDERSON, New Haven, Conn., points out that the conditions to which resuscitation applies are all essentially forms of asphyxia. They included drowning, electric shock, asphyxia of the new-born, carbon monoxide, morphine, cyanide and alcohol poisoning, anesthetic and postoperative depression, pulmonary edema and hemorrhage. For brief complete asphyxia, involving failure of breathing, the principal measure of resuscitation is artificial respiration, reinforced by inhalation of carbon dioxide and oxygen. For prolonged asphyxia, including coma with depression of breathing, the principal measure of resuscitation is inhalation of carbon dioxide and oxygen, initiated, when needed by artificial respiration. The various forms of apparatus for treatment of asphyxia are evaluated. Artificial respiration apparatus of the laboratory type should be available in the operating room. But such apparatus is not suitable for general use by laymen. Outside the operating room and the hospital, reliance should be placed on inhalators and the Schafer prone pressure method of artificial respiration. The theory of asphyxia now generally accepted in the medical sciences is inconsistent with the facts of resuscitation established clinically. If the condition now called "acidosis" were really acid poisoning, inhalation of carbon dioxide would further poison the victims of asphyxia. The fact is, on the contrary, that carbon dioxide combined with a supply of oxygen has proved to be the specific cure for asphyxial "acidosis." For further progress in resuscitation and in related problems of clinical physiology the development of a sound theory of asphyxia, and of "acidosis," or acarbica, is urgently needed. (*Journal A. M. A.*, Sept. 8 and 15, 1934.)

THE DOCTOR'S LIBRARY

Acknowledgment of all books received will be made in this column and this will be deemed by us a full compensation to those sending them. A selection will be made for review, as expedient.

DEVELOPMENTAL ANATOMY: A Textbook and Laboratory Manual of Embryology, by Leslie Brainerd Arey, Robert Laughlin Rea Professor of Anatomy, Northwestern University, Chicago, Ill. Third Edition, Revised. 593 pages with 547 illustrations, many in color. Philadelphia and London: W. B. Saunders Company, 1934. Cloth, \$6.50 net.

Through its three editions in the past ten years, this work has become the leading text in embryology in this country. The present edition has maintained the standard of its predecessors. It is well illustrated and the presentation is clear and up-to-date. The general principles of early development and the field of organogeny are well proportioned for a teaching text. Human development is stressed. A laboratory outline dealing with the development of the chick and embryo pig occupies the last fifth of the work.

A MANUAL OF THE PRACTICE OF MEDICINE: By A. A. Stevens, A.M., M.D., Formerly Professor of Applied Therapeutics in the University of Pennsylvania; Honorary Consulting Physician to the Philadelphia General Hospital; Consulting Physician to St. Agnes Hospital, Philadelphia. Thirteenth Edition, Revised. 685 pages. Philadelphia and London: W. B. Saunders Company, 1934. Cloth, \$3.50 net.

When a medical book has attained its thirteenth edition its reputation can be said to be pretty well established. This revision has consisted of the elimination of obsolete matter, and additions to make it conform with present-day knowledge of medicine. It was never intended to replace the larger works on practice. It will be found a convenient work of reference—a sort of desk book—for the student or the busy practitioner whose spare time reading will include the larger and more complete works.

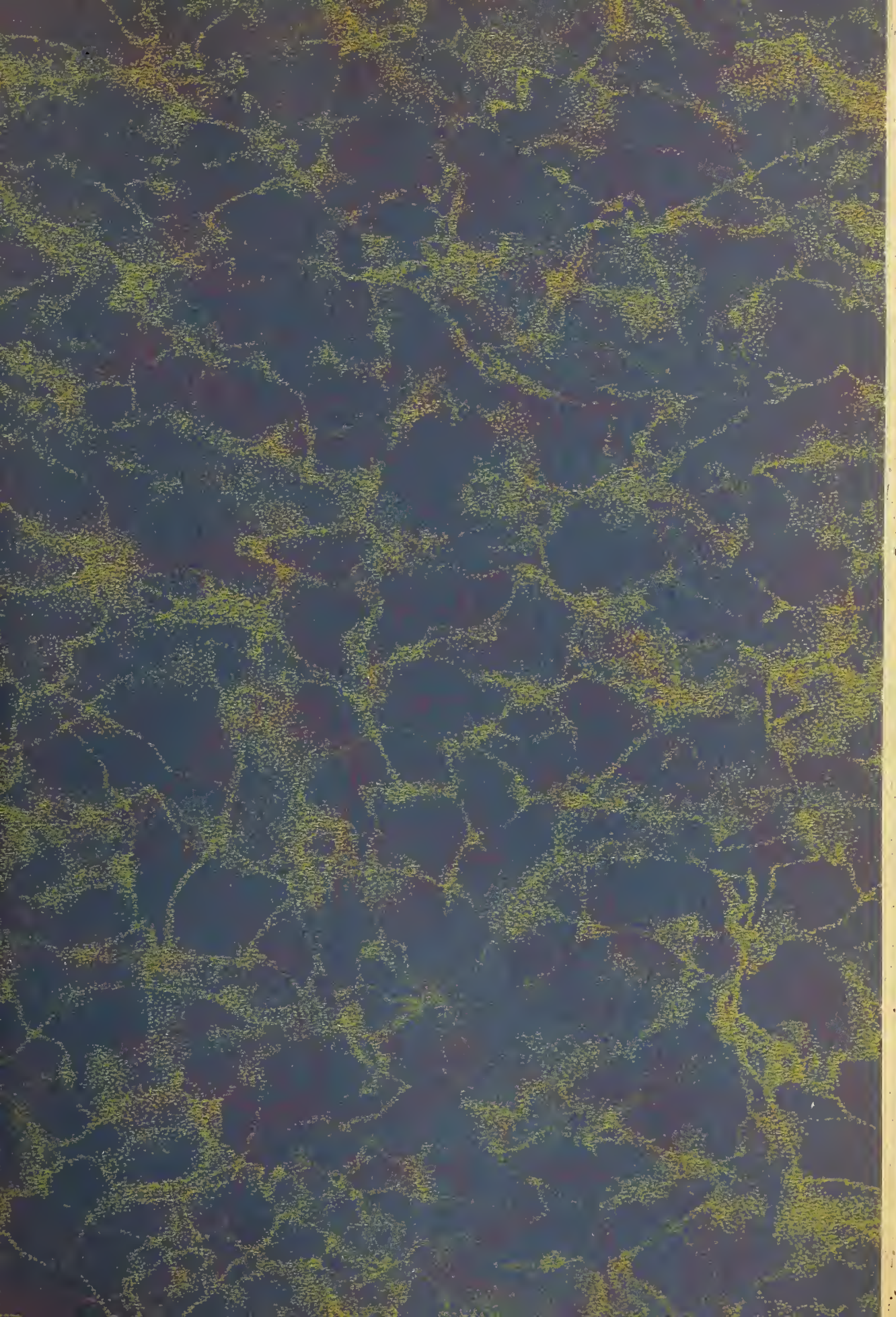
DIAGNOSIS AND TREATMENT OF PULMONARY ABSCESS IN CHILDREN

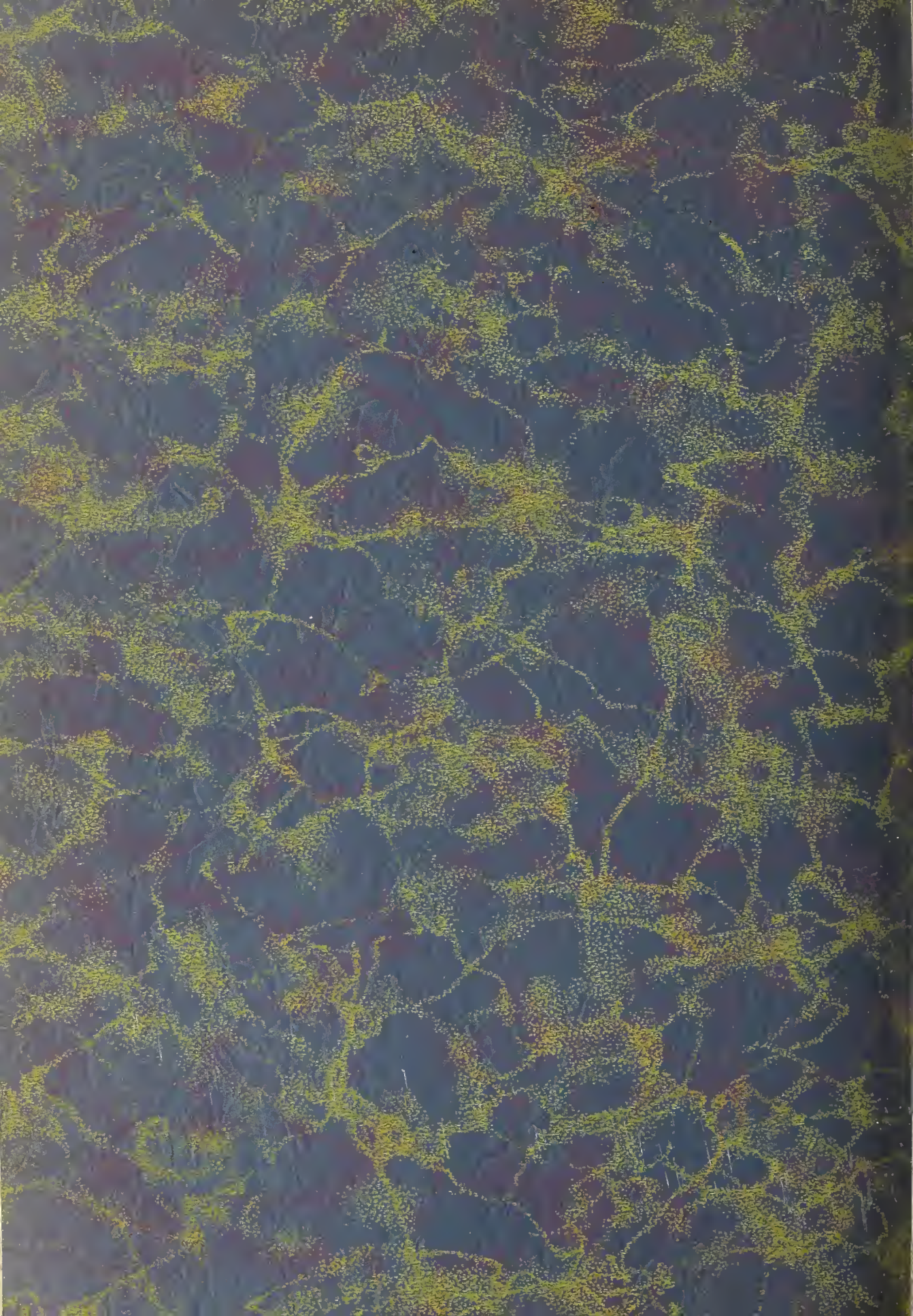
David T. Smith, Durham, N. C., believes that the history of a tonsillectomy or aspiration of a foreign body should at once direct the attention to the possibility of a fusospirochetal abscess. A child with the clinical signs and symptoms of pneumonia who has gingivitis or Vincent's infection of the tonsils may have a fusospirochetal abscess of the lungs. The history, physical signs and roentgen shadows may be identical in cases of bacterial abscess, fusospirochetal abscess and mycotic abscess. The final diagnosis rests entirely on a study of the pulmonary secretions. Recourse to laryngeal swabbings, bronchoscopic drainage and pleural tapping may be necessary. Exploring the lung with a needle in search of an abscess is contraindicated because of the danger of producing empyema. The common bacteria that produce lung abscess are easily cultivated on blood agar. The fusiform bacilli and the thicker spirochetes (*Treponema buccale* and *Treponema vincenti*) are readily demonstrated by staining a smear of the secretion with gentian violet or dilute carbofuchsin. The finer spirochetes (*Treponema microdenetum* and *Treponema macrodenetum*) may be shown by the Fontana stain or by the darkfield apparatus. When chunks of purulent sputum can be obtained, the smears should be made from the pus in the center. Cells of the yeastlike and moldlike fungi may be found by direct micro-

scopic examination after the material has been treated with a 10 per cent solution of sodium hydroxide. The higher bacterial forms may be found in fresh preparations as "sulphur granules" or demonstrated in stained smears as branching Gram-positive rods and filaments. Some of the nocardia or streptothrix organisms are nonacid-fast and some acid-fast. Sometimes it is necessary to inoculate a guinea pig to prove that these acid-fast forms are not atypical tubercle bacilli. The general supportive measures can be applied equally well to all types of pulmonary abscess. If the bacterial abscess is caused by an organism of the gas gangrene group, the patient should be treated with specific or polyvalent antigangrene serums. The acute staphylococcal abscesses might be treated with the new staphylococcal antitoxin. Abscesses due to the other bacteria should be treated palliatively in the acute stage unless empyema develops. In the subacute stage postural drainage, bronchoscopic drainage and perhaps autogenous vaccine therapy is indicated. If the lesion persists for three months, it has reached the chronic stage and should be treated by open operation and drainage. In the fusospirochetal type of pulmonary abscess arsenic treatment should be started within the first two weeks of the disease. Either neoarsphenamine or sulpharsphenamine may be used in doses about one-half as large as a similar child would require for syphilis, but repeated every three or four days up to six or eight doses. Bronchoscopy should be employed if postural drainage is not effective. Phrenicectomy and artificial pneumothorax is not advised. In cases in which the lesions persist for three months while the patient is receiving arsenic therapy, postural drainage and bronchoscopic treatment, the abscess is chronic and should be drained by open operation. The mycotic abscesses of the lung should be treated by gradually increasing doses of potassium iodide. If the patient does not respond to this treatment, it should be supplemented by inhalations of ethyl iodide with an initial dose of from 0.5 c.c. to 1 c.c. once daily, gradually increased to 2 c.c. three times daily. Vaccine therapy seems to be of value in some cases as a supplementary treatment. (*Journal A. M. A.*, Sept. 29, 1934.)

THERAPY OF COOK COUNTY HOSPITAL: THERAPY OF DISTURBANCES DUE TO HEAT

Bernard Fantus, Chicago, discusses the prophylaxis and treatment of the therapy of disturbances due to heat as it is carried out by the attending staff of the Cook County Hospital. Excessive exposure to heat is liable to result in one of three rather specific conditions: heat cramps, heat prostration or heat stroke. In addition to these, it must be appreciated that, when a person is exposed to excessively high external temperature, a strain is put on the entire system, most especially the circulatory mechanism and the emunctories, so that persons handicapped by almost any systemic disease are prone to suffer from an aggravation of their symptoms entirely because of this functional strain. All such persons are in greater need of protection against such exposures than are normal persons and they can be relieved of distresses due to heat exposure, even though the distresses are not of a specific type, by measures directed against the excessive heat and its results rather than by digitalis, diuretics or hypnotics that might otherwise seem indicated. Even relatively normal persons differ greatly in their ability to tolerate heat. Least able to do this are the very young, the very old and the obese. Alcohol addicts and persons who have once had sunstroke are particularly predisposed and require especial protection. (*Journal A. M. A.*, Sept. 29, 1934.)





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Michigan State Medical Society

Official Proceedings—House of Delegates

Special Meeting

Flint, Michigan, April 12, 1934

MUTUAL HEALTH SERVICE

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Michigan State Medical Society

Official Proceedings—House of Delegates

Special Meeting

Flint, Michigan, April 12, 1934

HOUSE OF DELEGATES

Thursday Morning, April 12, 1934

The Special Meeting of the House of Delegates of the Michigan State Medical Society, pursuant to the call, convened in the Hurley Auditorium of the Hurley Hospital in Flint, Michigan, on Thursday, April 12, 1934, at 10 a. m., with The Speaker, Henry A. Luce, presiding.

The following delegates and alternates were present:

Alpena County	Mason
F. J. O'Connell	L. W. Switzer
Bay-Arenac-Iosco	Mecosta
L. F. Foster	G. H. Yeo
Berrien	Monroe
W. C. Ellet	P. D. Amadon
Branch	Northern Michigan
Calhoun	Fred Mayne
C. S. Gorsline	Oakland
A. T. Hafford	C. T. Ekelund
Cass	R. H. Baker
Chippewa-Mackinac	F. A. Baker
Clinton	Oceana
G. H. Frace	Otsego-Montmorency
W. C. McCutcheon	Crawford-Oscoda-
Dickinson-Iron	Roscommon-Ogemaw
Eaton	Claude R. Keyport
A. G. Sheets	Ontonagon
Genesee	Ottawa
Frank Reeder	A. E. Stickley
George Curry	Saginaw
C. F. Moll	R. M. Kempton
Gogebic	G. Harry Ferguson
Grand Traverse-Leelanau	E. J. Evans
E. B. Minor	Shiawassee
Gratiot-Isabella-Clare	I. W. Greene
T. J. Carney	St. Clair
Huron-Sanilac	A. L. Callery
W. B. Holdship	Tri-County
D. D. McNaughton	Tuscola
Ingham	W. Joe Smith
L. G. Christian	Washtenaw
Karl Brucker	John Sundwall
Ionia-Montcalm	John A. Wessinger
W. W. Norris	Wayne
Jackson	H. W. Yates
Phillip Riley	W. D. Barrett
James O'Meara	R. W. Luce
Kalamazoo	E. C. Baumgarten
F. T. Andrews	A. P. Biddle
Charles Ten Houten	G. C. Penberthy
Ralph G. Cook	B. L. Connelly
Kent	E. D. Spalding
A. V. Wenger	J. L. Chester
G. H. Southwick	L. J. Gariepy
J. D. Brook	W. R. Clinton
Carl F. Snapp	C. F. Brunk
Leon E. Sevey	L. T. Henderson
Lapeer	C. K. Hasley
H. M. Best	B. U. Estabrook
Livingston	S. W. Insley
Hollis L. Sigler	L. O. Geib
Luce	D. P. Foster
H. E. Perry	H. W. Peirce
Macomb	S. E. Gould
J. N. Scher	C. S. Ratigan
Manistee	V. L. Van Duzen
A. A. McKay	
Marquette-Alger	
V. Vandeventer	

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The Speaker: The time has now arrived for the opening of the special session of the House of Delegates of the Michigan State Medical Society.

Chairman of the Credentials Committee, have you a report?

Dr. T. J. Carney (Gratiot-Isabella-Clare): There are forty-five members registered at this moment.

The Speaker: Forty-five accredited delegates have registered, constituting a quorum. Mr. Secretary, will you make the roll call?

The Secretary: Mr. Speaker and Members of the House of Delegates: I have signed signatures to the roll call of this special session of forty-five accredited delegates. I would suggest that some delegate make the motion that these signed slips constitute the roll call of this House.

Dr. A. P. Biddle (Wayne): I so move.

Dr. C. S. Gorsline (Calhoun): I support the motion.

The Speaker: Is there any discussion? Those in favor say "aye"; those opposed say "no." It is carried.

Mr. Secretary, will you read the call for the special meeting?

The Secretary: Mr. Speaker, the call for the special meeting of the House of Delegates is as follows, which was sent out on March 9, 1934, complying with the provisions of the Constitution and By-Laws:

To Secretaries of County Societies and Delegates of the 1933 Annual Meeting.

Official Call for Special Meeting of the House of Delegates

Gentlemen: Please be advised that there will be a Special Meeting of the House of Delegates of the Michigan State Medical Society in the Auditorium of the Hurley Hospital in Flint on Thursday, April 12, 1934, at 10:00 A. M. (Fast time).

The purpose of the Special Meeting is: "To receive and consider the Report and Studies of the Committee on Medical Economics and to give instructions to the Committee as to its further duties and activity."

Delegates elected and appointed to represent County Societies at the 1933 Annual Meeting in Grand Rapids shall constitute the delegates to this special session. In the event that the delegate representing a County Society at the 1933 Annual Meeting is no longer eligible to serve or is unable to attend, County Societies shall elect a delegate to serve in that capacity.

County Secretaries will provide delegates with a credential certifying that the delegate is duly authorized to represent a County Society. Delegates will present their credential to the Credential Committee in order to be seated.

By Direction of the Council

B. R. CORBUS, *Chairman*
G. L. LE FEVRE, *President*
H. A. LUCE, *Speaker*.

Attest:

F. C. WARNSHUIS, *Secretary*
Grand Rapids, Michigan.

Mr. Speaker, I declare that this notice was sent to every county society and the delegates listed as having attended the 1933 annual session. The notice was also published in the April issue of the JOURNAL OF THE MICHIGAN STATE MEDICAL SOCIETY of this year, and a letter was also sent to the delegates containing the report of the Committee, again calling attention to notice of this special meeting.

The Speaker: The Constitution having been complied with, the House is now constituted.

The Secretary: It is my unfortunate duty and with deep regret that I announce to the House that three days ago the brother of our President, Dr. Le Fevre, died. The funeral is this morning. I was talking to Dr. LeFevre last night over long distance. He is leaving at eleven o'clock and will be here about one o'clock this afternoon.

Without making this a matter of record when he arrives, having just come from the funeral of his brother, I think it would be a grateful tribute if The Speaker of the House would authorize the appointment of a Memorial Committee who, during the course of the next few days, will express to our President our sympathy over the loss of his brother.

The Speaker: If there are no objections, the Speaker will so act.

Dr. Reeder! (Introducing Dr. Reeder, Vice Speaker of the House of Delegates of the Michigan State Medical Society.—Applause.)

Vice Speaker Reeder took the chair.

SPEAKER'S ADDRESS

The Speaker: Mr. Vice Speaker and Delegates of the Michigan State Medical Society: Eight months ago yesterday the House of Delegates made medical history. It faced its economic problems squarely and directed its Committee on Medical Economics toward solutions. As a result, other states look hopefully toward Michigan's leadership and statesmanship for guidance. Equally important is the evidence that the public looks toward this House for the answers to its problems of medical care. Ours is no small responsibility.

When you honored me by your choice to this office, I had little idea that within three months I would be so intimately associated with your Committee on Medical Economics. As a matter of routine, I attempted to keep myself informed of the Committee's activities. However, events so shaped themselves that for a period of two months it became necessary for me to devote all of my time to assisting the Committee as best I could.

After the meeting last September, the Committee undertook, as its first task, the matter of health insurance. Conflicting reports concerning the validity of the principle of health insurance gave the committee great concern. It seemed that the only safe way to proceed was through a field study of health insurance in Europe. During these deliberations my position in the committee was that of unofficial observer.

The matter was finally presented to the Executive Committee during the latter part of December. The Chairman of the Executive Committee concluded that the subject was one that concerned not only Michigan but all the other states as well. He, therefore, concluded that the best results would be obtained if the Executive Committee met in Chicago with our employees in the national organization. The purpose of such a meeting was obvious. Michigan sought advice and guidance in the solution of its problems.

To me the results of this meeting with our employees were both unsatisfactory and disturbing. Those present, in addition to the Executive Committee and Dr. Bruce, were Dr. West, Dr. Leland, Dr. Woodward and Dr. Carey, Ex-President of the A. M. A.

The Michigan delegation placed its problem before these men and asked for specific information.

The information requested was not forthcoming and the general attitude seemed antagonistic. While Dr. West kindly explained the workings of the A. M. A., the discourse was not on the subject and failed to answer our questions. Dr. Leland appeared to be guarding 107 pages of manuscript on the subject of health insurance, but stated he was not in a position to report. Dr. Carey magnanimously offered advice that seemed to be a bit gratuitous. He said that we should thoroughly thrash out the whole subject, that we should not involve ourselves, and that Michigan should delay lest it get into

trouble. In short, the advice was "Do nothing." All this, of course, gave little information and less comfort to the Michigan Executive Committee. During the discussion, Dr. Bruce asked Dr. West certain questions concerning the publications of the A. M. A., and the answers were anything but satisfactory. The representative of the A. M. A. assured the Executive Committee of the Michigan State Medical Society that they had no objection to Michigan making an independent study of European plans.

After a discussion of the costs of a European study, and upon Dr. Bruce's assurance that the budget from the McGregor Fund would absorb such costs, the Executive Committee voted unanimously to send Dr. Sinai and me to make the investigation. Within six days we sailed.

The report, following our return, was presented to the Economics Committee and the Executive Committee and the Board of Trustees of the A. M. A. It was this report that activated the Economics Committee toward an early report to the House of Delegates. I feel that the delegates are entitled to full information. If it is your wish, the report of the European study will be presented following the main subject on our agenda for today—the report of the Committee on Medical Economics.

The Speaker resumed the chair.

The Speaker: The report of the Committee on Medical Economics, Dr. Marshall.

Dr. W. H. Marshall: Mr. Speaker and Gentlemen: First of all, may I welcome you to the Murlless Brown Auditorium, the home of the Genesee County Medical Society, and the staff of Hurley Hospital. The idea of this auditorium originated with Mr. Brown, who was a workman at the Buick Motor Company and who was a member of the Hurley Hospital board representing the labor group.

May I pay a tribute to Mr. Brown, a layman, who visualized the value of such an auditorium to the medical profession. The Genesee County Medical Society generously furnished the seats and other equipment, and meetings are held here practically every week. These meetings are, as you know, characterized by an open-mindedness and a friendly spirit that has made the Genesee County Medical Society rather famous, and I trust that same spirit will be the dominant note here today.

REPORT OF THE ECONOMICS COMMITTEE

The House of Delegates of the Michigan State Medical Society at a meeting on July 12, 1933, directed its Committee on Medical Economics to continue its study, and prepare and present a plan or plans for health insurance. At the same time the delegates adopted the following policies for the guidance of the Committee:

1. Free choice of physician by the insured.
2. Limitation of benefits to those of medical service.
3. The control of medical service benefits by the profession.
4. The exclusion of individuals or organizations that might engage in health insurance for profit.

The Committee has approached its task with the above policies clearly in mind. It has examined the available evidence concerning the operation, the defects, and merits of health insurance in other countries. As a result the conclusion has been reached that no system of health insurance now in existence completely conforms to the policies set forth. Therefore, the Committee records its opposition to the introduction of any of the present systems to the United States.

At the same time your Committee recognizes the need of a more equitable distribution of the burdens

of sickness and, through this, a wider distribution of the benefits of the medical services. It, therefore, presents a plan which embodies such distribution in accordance with the above policies.

Your Committee feels that as much attention should be given to the problem of discarding an unworkable plan as to the extension of one that proves successful. Since there is little basis in the United States or elsewhere for judging the efficacy of the plan presented, the Committee recommends its adoption as an experimental project, limited to one or more areas in the state. As such, defects in its practical application may be carefully studied and, if possible, corrected. The limitation to one or two areas will simplify study and expedite the elimination of unworkable aspects.

Although the "Continuation program" adopted by the House of Delegates in September, 1933, gave the Committee permission to interview the representatives of industry and of the recipients of medical services, no such advances have, as yet, been made. The Committee feels that there must be an agreement by the House of Delegates and other professional groups upon the fundamental features of the program. After an agreement is reached the necessary interviews will be arranged and the results reported. At the same time, legal advice concerning the organization and administration of the plan will be sought.

Since the title "Health Insurance" carries with it the implication of conformity to European plans, and since the plan presented does not so conform, the Committee has selected for it the title **MUTUAL HEALTH SERVICE**. The plan is a mutual one in the sense that three groups are vitally concerned in its success and must engage in a joint effort from which each will derive proportional benefits. These groups are, first, the public, or consumers of medical care; second, industry; and third, the professions.

Finally, the Committee wishes to emphasize that the profession must grasp the dragging reins of medical economics. As great as is the need for a constructive program, it is no greater than the opportunity before the profession to publicly exhibit its ability and its willingness to act courageously and effectively in meeting social and economic problems. To quote Walter Lippmann: "In the midst of unparalleled difficulties the American Democracy has shown a discipline, a resourcefulness, a fertility of invention and a capacity to produce leadership and respond to it, which enable us to stand up before all the world and avow our confidence in our own strength, *our own purposes*, and *our own way of life*." The Committee respectfully submits the fundamentals of a plan to "meet our own purposes and our own way of life," a plan that is intended to meet American needs and preserve the ideals of the American medical professions.

Signed:

F. A. BAKER, M.D.
L. G. CHRISTIAN, M.D.
B. U. ESTABROOK, M.D.
I. W. GREENE, M.D.
STUART PRITCHARD, M.D.
P. A. RILEY, M.D.
F. C. WARNSHUIS, M.D., *Ex-officio Secretary*
W. H. MARSHALL, M.D., *Chairman*.

I will now call on Dr. Warnshuis for, first, the presentation of the plan and, secondly, a supplementary report.

The Secretary: Mr. Speaker and the House of Delegates: This is on Page 5 of the Committee's report.

MUTUAL HEALTH SERVICE

1. The purpose of **MUTUAL HEALTH SERVICE** is to provide, through the agency of a non-profit organization, health services at agreed costs to employed persons and the families of employed persons whose annual income does not exceed \$.....*

[That item, and explanation of that, will be given by Dr. Sinai on the matter presented to the House of Delegates for your decision and conclusion.]

For the purposes of this plan the word "family" is defined as including, in addition to the employee, any or all of the following *unemployed and dependent members living in the home of the employee*: wife (husband), sons, daughters.

With the exception of such limitations as are hereinafter provided, the term "health services" shall include the services of Doctors of Medicine, Doctors of Dentistry, Registered Nurses, Pharmacists, laboratories and hospitals as well as drugs and medical, surgical and optical appliances.

Comment.—This is in conformity with the policies adopted by the House of Delegates dealing with the provision of health services through a non-profit agency and the limitation of benefits to those of health services. At the end of the experiment the professions will be in a strong position to determine what changes should be made in the services, in the total costs of services per person and in the division of income between the professional groups providing the services.

2. In accordance with the spirit of mutual responsibility between those who provide and those who benefit by the provision of health services the general direction of **MUTUAL HEALTH SERVICE** shall be as follows:

A. Board of Governors.

The Board of Governors, the members of which shall serve without pay, shall be constituted as follows:

Three (3) Doctors of Medicine elected by the House of Delegates of the Michigan State Medical Society to serve for a period of three years, except that of the first three elected one shall serve for one year, one for two years and one for three years. Thereafter one Doctor of Medicine shall be elected annually for a period of three years.

One (1) Doctor of Dental Surgery elected by the House of Delegates of the Michigan State Dental Society to serve for a period of three years.

One (1) Pharmacist elected by the State Pharmacy Association to serve for a period of three years.

One (1) Registered Nurse elected by the State Nurses Association to serve for a period of three years.

One (1) Hospital Superintendent elected by the the State Hospital Association to serve for a period of three years.

The above members of the Board of Governors shall elect for a period of three years two (2) additional members to represent the industries coöperating in **MUTUAL HEALTH SERVICE** and two (2) additional members to represent the recipients of health services.

Comment.—The purpose here is to place control of **MUTUAL HEALTH SERVICE** in the hands of the professional groups with representation of industry and the recipients of services. It is felt that this form of control is in the interests of both the public and the professions and will receive hearty public support.

3. Within such limitations as may hereinafter be provided, the general powers and duties of the Board of Governors shall be as follows:

- a. The supervision of the administration of **MUTUAL HEALTH SERVICE**.
- b. The appointment of administrative personnel.

*The upper income limit was placed at \$1500.

- c. The preparation of such rules and regulations as may from time to time become necessary to maintain or clarify the purposes of MUTUAL HEALTH SERVICE.
- d. The preparation of fee schedules for the particular health services hereinafter described.
- e. The administration and control of financial matters including the collection, expenditure and investment of funds.
- f. The appointment of such committees as may be necessary to the proper functioning of MUTUAL HEALTH SERVICE.

Comment.—Emphasis is placed on the need for the control of financial matters by a central agency. It cannot be emphasized too strongly that such control will prevent detrimental competition with its usual result—a lowering of the quality of service.

4. Local direction in each county or district where MUTUAL HEALTH SERVICE is maintained shall be by the following committees and a District Mutual Health Committee:

- a. Local Medical Committee.
- b. Local Dental Committee.
- c. Local Nursing Committee.
- d. Local Hospital Committee.
- e. Local Pharmacy Committee.

5. Each Local Committee shall be composed of five members elected or appointed for a period of three years by the body represented. In addition to such powers and duties as may hereinafter be provided the general functions of each Local Committee shall be as follows:

- a. Local Medical Committee.
 1. The preparation of lists of general practitioners and of specialists for the provision of medical services.
 2. The control of the quality of medical service.
 3. The hearing of and action upon complaints involving physicians or physicians and patients.
 4. The reference, with recommendations, of those complaints involving a physician and a member of any other professional group to the District Mutual Health Committee.
 5. The transmission of recommendations dealing with financial matters to the District Mutual Health Committee.

(The powers and duties of other Local Committees representing professional groups would be comparable to the above.)

Comment.—Emphasis is placed here on the autonomy of local professional groups on all matters, other than financial, that have to do with the provision of services.

6. The District Mutual Health Committee shall be composed of the chairmen of the Local Committees, who shall elect one (1) additional member to represent the local industries cooperating in MUTUAL HEALTH SERVICE and one (1) member to represent the local recipients of health services.

The general powers and duties of the District Mutual Health Committee shall be as follows:

- a. The hearing of and action upon complaints transmitted by Local Committees.
- b. The transmission, with recommendations, of matters involving finances to the Board of Governors.

Comment.—The function of the District Mutual Health Committee is largely that of a judicial body. Upon this committee will rest the task of adjusting any differences between professional groups, industry and the recipients of services.

7. Any party involved in an action taken by a Local Committee shall have the right to appeal to the District Mutual Health Committee.

Any party involved in an action taken by the District Mutual Health Committee shall have the right to appeal to the Board of Governors.

8. The Board of Governors shall maintain a Local Executive Secretary and such other personnel as may be necessary in each District where MUTUAL HEALTH SERVICE is established. The Local Executive Secretary shall serve as executive secretary for each Local Committee and the District Mutual Health Committee.

9. The employee shall have the right to choose a general practitioner of medicine and a general practitioner of dentistry. There shall be no restrictions to such freedom of choice except as follows:

- a. The general practitioner shall reside in the employee's city or within a reasonable distance from the employee's residence. "Reasonable distance" shall be determined by the Local Committee.
- b. The general practitioner shall hold a license to practice his profession in Michigan.
- c. The general practitioner shall have signified in writing his intention to provide service in accordance with the plan of MUTUAL HEALTH SERVICE.

10. The employee shall have the right to change his selection of a general practitioner of medicine or of dentistry in accordance with either of the following procedures:

- a. By filing with the Local Executive Secretary a written notice of the intended change 14 days before any of the following dates: January 1, April 1, July 1, October 1, requesting a change on any of the above dates and naming the successor to his general practitioner.
- b. By filing with the Local Executive Secretary a written request for an immediate change, stating the reason or reasons for the request and naming the successor to his general practitioner.

11. The general practitioner of medicine or of dentistry chosen by the employee shall have the right to accept or reject the application for his services. If he accepts he shall have the right to subsequently withdraw his acceptance in accordance with the following procedures:

- a. By filing with the Local Executive Secretary a written notice of his withdrawal 14 days before any of the following dates: January 1, April 1, July 1, October 1.
- b. By filing with the Local Executive Secretary a written request for immediate withdrawal stating his reason or reasons for such withdrawal.

Comment.—Paragraphs 9, 10 and 11 are in accord with the policy of the House of Delegates regarding "free choice." Such choice is equally the right of both the patient and the general practitioner. The purpose of the procedure governing a change in choice is not to offer any hindrance to the change. It is only to make the change an orderly one. At no time should the validity of any reason for a change or withdrawal be questioned.

12. The names of persons accepted for services by the general practitioners shall be known as the general practitioner's "Family List." The total numbers of persons on the Family List shall not exceed one thousand (1,000) for any one general practitioner; provided, however, that in those cases where a general practitioner has one or more salaried assistants licensed to practice in Michigan the number of persons on the Family List shall not exceed sixteen hundred (1,600). The District Mutual Medical Committee shall be empowered to increase the limit from 1,600 to 2,000 when, in its judgment, such extension or increase is necessary.

Comment.—It is recognized that after a period of experimentation the total number of persons permitted to register on any one physician's list may be changed. Lacking any experience, the decision was of necessity an arbitrary one. The limit of 1,600 is intended to prevent the employment of a number of recent graduates in order to provide service to a great number of people. In the final analysis it is the District Mutual Health Committee, acquainted with local or specific conditions, that has the power to decide upon increases in Family Lists.

13. The general practitioner of medicine shall provide for the persons on his Family List such services as may be reasonably expected according to the standard of the community in which he practices his profession. These services shall include physical examinations, immunity tests, immunizations, prenatal and postnatal care and such services other than those designated as specialists' services; provided, however, that the general practitioner may include specialists' services in accordance with the regulations adopted by the Local Medical or the Local Dental Committees and approved by the Board of Governors.

Comment.—It is the judgment of the Committee that the general practitioner should occupy a high position as a family guide in medical or dental matters. Upon the general practitioner, therefore, rests the main burden of responsibility for not only the provision of routine preventive and curative services but also for guidance in matters requiring special care. The placement of the general practitioner in this position will serve to keep him informed concerning the diagnosis, treatment and prognosis of referred cases.

14. Each person on the Family Lists shall be entitled to the following health service:

a. Home, office and hospital services of a general practitioner of medicine and such services of medical specialists, nurses, pharmacists, laboratories and hospitals as may, in the opinion of the general practitioner, be necessary; provided, however, that certain services shall be limited as follows:

1. Hospital services shall not be provided for mental diseases and tuberculosis.
2. Hospital services shall include a semi-private or ward bed, operating rooms, medicines, dressings, laboratory and other services that may be provided in the hospital for a period of 21 days during any one year. For any illness requiring hospitalization for more than 21 but less than 90 days, the MUTUAL HEALTH SERVICE shall pay 75 per cent of the per diem hospital charges.
3. The services of a special nurse shall be limited to a period of 30 days during any one year. The services of a visiting nurse shall be limited to 60 days during any one year.
4. Drugs shall be prescribed by a Doctor of Medicine to any member of the Family List at a cost of 25 cents for each prescription. The difference, if any, between this cost and the total cost of the prescription shall be paid by MUTUAL HEALTH SERVICE. Drugs shall be prescribed in accordance with such regulations as may be approved by the Local Medical and the Local Pharmacy Committees.
5. The care of any illness or accident provided for under the Workmen's Compensation Act shall be excluded from MUTUAL HEALTH SERVICE.

15. The costs of services shall be borne by the employee or jointly by the employee and his employer. Payments shall be made in advance either weekly, monthly, semi-annually or annually at a rate or rates established by MUTUAL HEALTH SERVICE.

16. For the period of the experiment the annual costs of services per person on the Family Lists shall be \$27.88.

17. The annual sum of \$27.88 per person on the Family List shall be expended as follows:

a. General Practitioner of Medicine.....	\$ 5.00		
1. Report of Annual Physical Exam.....	.50		
2. Report of Immunization.....	.25		
b. Medical Specialists' Services.....	3.00		
c. Dental Services	5.00	18 %	
d. Nursing Services	2.50	9 %	
e. Hospital Services	5.00	18 %	
f. Drugs, Medical, Surgical, Optical Appliances	2.00	7 %	
g. Laboratory Services	1.00	3.5 %	
Total.....	\$24.25		
h. Administration, 10%	2.42	9 %	
i. Surplus, 5%	1.21	4.5 %	
Grand Total.....	\$27.88	100 %	

Comment.—Your Committee wishes to make clear that the above cost and expenditure figures are estimates based upon expenditures by families. These expenditures were for services actually purchased, not for all the services needed. There are no data upon which accurate predications of this increased demand may be based. The experience gained in MUTUAL HEALTH SERVICE should provide such data and should form the basis for any revisions of costs that may be necessary. The above costs under MUTUAL HEALTH SERVICE will be subject to some revision dependent upon the community or communities where the experiment is undertaken and in accordance with the facilities that may be available.

18. For each community or area in which MUTUAL HEALTH SERVICE operates, fee schedules shall be prepared for the following services shown in Paragraph 17:

1. Specialists' services in Medicine and Dentistry.
2. Nursing services.
3. Hospital services.
4. Drugs, Medical and Surgical Appliances.
5. Optical services.
6. Laboratory services.

The fee schedules shall be prepared by the Local Committees and transmitted through the District Committee to the Board of Governors for final action.

19. Any general practitioner of medicine or of dentistry whose qualification for the provision of any specialist service is approved by the Local Medical or the Local Dental Committee shall be entitled, in addition to the capitation fee, to 75 per cent of the specialist's fee as shown on the fee schedule.

The Local Committee shall have power to grant, reject or withdraw approval for specialist service or services by the general practitioner.

Comment.—The most important question that should be asked about any plan for health services is "What will prevent either a deterioration or a 'dead level' type of service?" In the practice of modern medicine one of the vital needs is to maintain and nourish the spirit of progress. Hence, the emphasis on continued training through postgraduate effort. The main factors in a physician's or dentist's progress in practice are his ability to apply the art and his ability to apply the science of practice. It is a tragedy that some well versed in the latter attribute are greatly lacking in the former. Both qualities are important and both must receive recognition.

The general practitioner who understands the art of practice may be expected to draw to himself the upper limit of 1,000 people. Thus will his art be recognized and his incentive to maintain that art strengthened. To this incentive should be added that for the improvement of his science and the method devised for this will be discussed in paragraph 22.

Likewise the general practitioner well versed in science must be recognized and provided with an incentive to maintain and improve that science. The only way to permit this is through allowing him to provide more science to the lesser number of people attracted to him. It need not be said that the above statements concerning incentives for continued improvement apply with equal force to the many general practitioners who ably blend both art and science in their practices.

Briefly, the Committee feels that the general practitioner should provide not only routine services but also any special service of which his colleagues judge him capable. In this case his colleagues are represented by the Local Committee. Thus are long years of effort and experience rewarded *if they merit reward*. Thus, too, is "control of service" placed directly in the hands of the profession concerned.

Here is also provided the economic incentive for the continued improvement of the quality of general practice. This incentive plus the method shown in paragraph 22 for giving expression to the desire for postgraduate study should result in a quality of service hitherto unequaled. Again the Committee wishes to emphasize the axiom that what is good for the profession is good for the public.

20. In the event that the cost for any service is proportionately higher than anticipated the total sum collected for that service shall be pro-rated among the individuals or institutions providing that service. In the event that the cost for any service is lower than anticipated, the excess shall be added to the Surplus or expended according to the judgment of the Board of Governors.

21. Surplus funds shall be maintained in separate accounts for each area or community and shall be expended or invested by the Board of Governors.

22. Two per cent (2%) of the sum allotted to the general practitioners of medicine and dentistry shall be deducted and placed in a "Postgraduate Training Fund." Expenditures from this fund shall be made by the Board of Governors with the advice of the State Medical and State Dental Societies.

Comment.—This section provides for the collective purchase of postgraduate training and insures a constant and self-sustaining improvement of the quality of service. In general the plan for postgraduate training should provide for a stated allotment every two years for each physician and dentist. If the allotment is not used it should revert to the central fund. During the physician's or dentist's absence, his practice should be taken over by his colleagues, without compensation, on the assumption that he will return the favor through accepting the same burden for his colleagues during their absences for postgraduate study.

The Committee feels that in the foregoing program there is presented a temperate policy for the guidance of the medical professions in the United States. It is a policy that preserves the essence of American practice in giving primary consideration to the potential consumers of health services. In this consideration those things that the profession has long cherished because they have been subjected to the retort of experience and have been found satisfactory are not only retained but strengthened. It is the Committee's opinion that the program presented is the studied and constructive answer of the profession to those encroachments upon private practice that have their origin in the unequal distribution of the services the profession commands.

If the House of Delegates approves the program the Committee recommends that the action be given full publicity. Michigan is practically the only industrial state that remains comparatively free of numerous plans and projects for the provision of health services. This freedom can be attributed to no other factor than the action of the Michigan State Medical Society in undertaking constructive studies. It must remain free until the profession has had the opportunity to experiment. Nothing will insure this freedom as completely as publicity.

At the same time in many other states the profession finds itself in a difficult position. Lacking a constructive program it is easy prey for commercial or political influences. Publicity given to the Michigan program may, therefore, exert a far-reaching effect in providing the profession in other states with the methods and materials for combating destructive influences. Against these influences nothing is more effective than the sure weapon of constructive action.

If the program presented is acceptable to the House of Delegates, the Committee proposes the following steps in order to begin the experiment as early as possible:

1. The discussion of the proposals with employers and employees. Naturally the communities or areas selected for the experiment will depend upon the reception given to the plan by these groups.
2. The presentation of the final detailed plan to the House of Delegates.
3. The presentation of the plan to the professional groups in the area or areas selected for the experiment.
4. The formation of the local and state committees already mentioned.
5. The preparation of reports to the House of Delegates during the progress of the plan.
6. The preparation of a final report, with recommendations, at the completion of the experiment.

There are certain implications in the plan for MUTUAL HEALTH SERVICE that merit the attention of the House of Delegates. These deal with the relation of the plan to the care of indigents and to public health activities.

The Committee sees no reason why the plan should not be extended to include the care of indigents. It feels that with few exceptions the profession's method of handling this problem has been hesitant and generally ineffective as a result of the lack of a definite program. It is not necessary to defend the assumption that while a person may be designated as "unemployed and indigent" his health needs differ little from those of his more fortunate neighbor.

It is generally accepted that the responsibility for the health needs of indigent persons rests upon the community. Nor is the responsibility lessened because it has been shifted to the profession in certain communities. Therefore, the Committee recommends that the Local Committees engage in a joint effort to extend MUTUAL HEALTH SERVICE to indigents. The method of extension is for the community to enter into a contractual arrangement with MUTUAL HEALTH SERVICE. Such an arrangement will permit the unemployed and indigent person the same relationship to his general practitioner as he enjoys while employed.

The effect of MUTUAL HEALTH SERVICE upon public health activities is fairly obvious. In brief, it means an expansion of the services of preventive medicine and dentistry by private practitioners and a concentration of public health work upon educational activities. The Committee feels that such concentration will be heartily approved by the public health agencies concerned.

Thought should also be given by the Delegates to the probable development of a movement in the United States toward some form of compulsion with respect to the purchase or distribution of health services. There is little doubt that the movement has gained momentum and that the coming legislative sessions in many states will see bills presented for compulsory health insurance.

If the experiment with MUTUAL HEALTH SERVICE is successful the profession will be in an exceedingly strong position to direct public opinion and thereby control legislative action in the interests of public welfare. It is obvious that the advantage of controlling medical legislation will lie with the first constructive program presented. If, in addition to being first, the program has a record of successful demonstration, the advantage will become great enough to direct legislative action. Only in this

manner may the profession hope to successfully combat commercialism and the profit-motive in the distribution of health services.

SUPPLEMENTAL REPORT OF THE COMMITTEE

As a supplement to its formal report your Committee presents certain additional items for consideration and action by the House of Delegates.

The first item deals with the matter of the upper limit of income and upon this question Dr. Sinai will present some data for the information of the delegates.

The second question deals with the association of official public health work with MUTUAL HEALTH SERVICE. It will be noted that public health is not represented on any of the Committees controlling MUTUAL HEALTH SERVICE. After some discussion of this aspect of Medical Care your Committee concluded that, if the general plan is approved, the House of Delegates should decide the following proposal:

That, in order to complete and unify all the health services in Michigan, the State Health Commissioner should be made a member of the Board of Governors and either the local or county health officer a member of the District Mutual Health Committee.

The third item deals with your Committee's suggestion for publicizing the program for MUTUAL HEALTH SERVICE.

In addition to its specific studies in Michigan your Committee has collected information on recent developments in medical care in other parts of the United States. Because of its knowledge of these developments, your Committee has suggested that if MUTUAL HEALTH SERVICE is approved by the House of Delegates, the plan be given as wide publicity as possible.

The purpose of this publicity is two-fold: first, to refute the widespread charge that the profession is unwilling to apply the experimental method to any solution of its economic problems, and, second, to offer to the profession and the public a constructive program as a weapon against such harmful trends as are already developed or are in the process of development. Your Committee feels that MUTUAL HEALTH SERVICE, if adopted by the House of Delegates, is the unanswerable reply of the profession to the charge that it has failed to give studied consideration to the economic problems of medical care. It also feels that this "declaration of principles" is a standard around which both the public and the professions may rally in mutual protection and with mutual confidence.

A brief description of certain of the developments in the country will serve to substantiate the Committee's opinion that a constructive program is, at this time, a pressing need.

Many county societies have undertaken projects in health insurance with little study and with almost no central or state authority. The county societies cannot be criticized too greatly for this action. It has come in response to the profession's and the public's demand "to do something," and in most cases the state societies, being without any program, have been willing to permit the county societies to bear the brunt of any ill-advised action. This situation is particularly acute in the western states.

Your Committee feels that the major danger of this lack of state society direction lies in its tendency to develop commercial competition between groups of physicians and between other professional groups, as well. The results of such commercial competition have been evident for many years in the application of Workmen's Compensation in certain states. It was for this reason that your Committee stressed the comprehensive program with a centralized and professional financial control.

In this same connection, your Committee has

noted the development of hospital insurance in over twenty states. There is nothing particularly wrong in the principle of hospital insurance. However, in the absence of a more comprehensive program your Committee feels that hospital insurance can expand in only one direction and that is to include other services. The demand for expansion has already arisen from the insured public. This means that, as additions to services occur, such additions become not a part of a generalized system but a part of hospital insurance and controlled by the agencies of hospital insurance.

Another significant development in this country is reported in the *New York Times* of March 16. The story dealt with the annual meeting of the advisory council of the Milbank Memorial Fund. At this meeting a plan for state controlled compulsory health insurance was presented and discussed. Those present included Mayor LaGuardia and Harry L. Hopkins, Federal Relief Administrator. To quote from the *Times*:

"The plan," Dr. Miller said, "provides for local differences of ability to pay and for the availability of medical facilities by dividing the services into two classes. The first includes those which should be mandatory for the entire state. It would include home and office care by physicians, prescribed drugs and medicines, hospital care where the institutions are available, and maternity benefits for women who remain under continuous prenatal supervision.

"The second class includes those which are permissive and which may be established in local areas, with the approval of the proper authority, when the extension is desired by the local area, when the costs can be financed, and when the competent personnel and facilities are available. This would include specialist services, dentistry, the clinic and the laboratory, home nursing, etc."

* * *

"You aren't going to get health insurance," Mr. Hopkins said, "if you expect people to do it voluntarily. I am convinced that by one bold stroke we could carry the American people along not only for health insurance but also for unemployment insurance. I think it could be done in the next eighteen months."

Whatever may come as a result of the above advocacy, your Committee views MUTUAL HEALTH SERVICE as the organization with which state or other authorities must deal. The history of compulsory health insurance is a history of disastrous results to the professions because of a lack of unity. It is a history of an organized group dealing with disorganized professional units or with individuals.

A third development in the United States is the drive toward unemployment insurance. Among medical leaders there is a too general apathy toward this movement. If unemployment insurance becomes both widespread and inclusive, your Committee feels that thought must be given by the professions to two items: first, the setting aside of a percentage of unemployment insurance funds to provide medical care for the unemployed, and, second, the question of unemployment by reason of physical disability.

Out of the second item it is not improbable that methods may be developed for the care of physically unemployable people so that they may again become employable. The history of Workmen's Compensation shows that the profession gave little or no thought to its medical aspects. In this connection the following quotation from the report of the Committee on Legislation and Public Policies in THE JOURNAL of the Michigan State Medical Society for March, 1912, will be of interest:

"True, we have had two sessions called by the Governor to consider special and specific subjects; yet at these sessions nothing of a medical or public health nature was considered. Nothing at these sessions could be legally or constitutionally considered other than those recommended from time to time by special message from the Governor to the Legislature. Therefore, if any amendments to our medical laws are to be made they must be made during the next regular session of the Legislature which will convene January, 1913."

It was at one of the special sessions where "nothing of a medical or public health nature was considered" that Michigan adopted the law for Workmen's Compensation. Your Committee presents this item for whatever may be its value in focusing attention upon unemployment insurance.

As reported to the House of Delegates at its last meeting, the California legislature has appointed a commission to study health insurance and report in January, 1935. No further information concerning the activities of the commission is available. The whole subject, however, is on the program of the Western Hospital Association meeting in Sacramento, California, this week, and also at a meeting to be held before the Commonwealth Club in San Francisco on Friday.

Recently the Committee on Medical Economics of the Colorado State Medical Society published a report advocating the application of the principle of health insurance. To quote from this report:

"The point at issue is not the insurance principle but how to use it.

"We are not unmindful of the opposition of the A. M. A. to the general plan of insurance medicine, especially as operated by European governments or by corporations for profit; nor unmindful of the deteriorations accompanying contract practice regardless of how disguised. The plan referred to is not in the opposed classes because it does not restrict opportunity to practice, nor free choice of physician, is on a non-profit basis and under the control and management of the profession. This places the responsibility where it belongs. All of us have looked to the A. M. A. for help. Thus far we have been disappointed."

An interesting booklet has been received recently by your Committee. It contains the platform and principles of the Medical League for Socialized Medicine, an organization with headquarters in Brooklyn and with a membership of over 500 physicians. This organization is unequivocally committed to the principle of salaried physicians providing service under the state.

These are a few of the evidences of the turmoil in medical economics. It is for its quieting and beneficial influence that your Committee has recommended that the plan of MUTUAL HEALTH SERVICE be widely publicized.

Finally your Committee wishes to report progress on two other studies that will be completed by July 1. The first study is concerned with the question of postgraduate education; the second, with the Detroit Participation Plan. Most of the data for both studies have been collected and a good part of the analysis has been completed. Your Committee feels that both studies will throw much light on subjects of vital importance to the profession and the public.

Respectfully submitted,

FREDERICK A. BAKER, M.D.
L. G. CHRISTIAN, M.D.
B. U. ESTABROOK, M.D.
I. W. GREENE, M.D.
STUART PRITCHARD, M.D.
P. A. RILEY, M.D.
W. H. MARSHALL, M.D.,
Chairman.

F. C. WARNSHUIS, M.D.,
Secretary.

The Speaker: At this point, the Chair will request the Chairman of the Credentials Committee to make a supplemental report.

Dr. T. J. Carney: Mr. Chairman, there are 71 members present at this meeting.

The Speaker: The Chair will approve the signed slips as constituting an addition to the roll call.

At this time Dr. Reeder has an announcement to make.

Dr. Frank Reeder made an announcement concerning luncheon arrangements.

The Secretary: May I at this time take occasion to present the Secretary of the Michigan State Dental Society, Dr. Davis, and the President of the State Dental Society, Dr. Prince.

The Speaker: Dr. Sinai, will you continue the presentation of the problem?

Dr. N. Sinai: Mr. Speaker and Members of the House of Delegates: The Committee has assigned to me the presentation of certain data which may assist the House of Delegates in determining what should be and what may be, in the event the plan is approved, the upper limit of income for the group provided with service under the program.

Up until a year ago it would have been impossible to present any data upon which the House of Delegates could have based judgment. Up until a year ago it would have been merely an opinion as to what should be the upper limit of the income group. But about a year ago there were published the results of a study made among approximately 10,000 families in the United States. Those results were not secured through going to a family and asking certain questions concerning the medical services received during the past year. It was a study that was projective, and the families were visited at intervals of two months throughout a period of a year, and a very careful record was kept of all the services secured or received by each family.

In addition to that, wherever we received information showing that the family had called the physician or had received services from a physician, in every instance where it was possible we checked up with the physician in order to be sure that the family was not giving us information that was wrong concerning costs, concerning illnesses, and so on.

This study was the first one made in the United States, and I have a very great confidence in the figures and the results not only because the study itself was very carefully planned but also because a control study, undertaken by the Metropolitan Life Insurance Company and for which the report has been published within the last month, bears out our figures in an unbelievable manner. Our percentages and the Metropolitan's percentages; our total costs and breakdown of the costs are unbelievably close together, so that if there is anything at all to the experimental method and the control method we are quite positive that the figures presented are correct.

The study was made at a time when we had a much better economic period than the one today. The study began in February of 1928 and continued in about 100 places in the United States through May of 1931, so that we had the good years of 1928, what was good in 1929 and 1930, and a few months in 1931. In other words, we had the peak period, and then we had a period when the curve was on a downward line.

After May, 1931, and in 1932 and 1933, no one can say what the public has purchased in the way of medical care or what the public has received in the way of medical care. The evidence, of course, is that the slope has gone downward, but no one is going to make even an estimate as to how low the actual expenditures have gone.

I have prepared a series of charts which bring out fairly definitely the type of information that is presented.

[Dr. Sinai presented a series of charts showing that if the average expenditure of \$8.50 for physicians' services under MUTUAL HEALTH SERVICE were applied to the population with incomes under \$2,000 the following increases in physicians' incomes would result:]

Cities over 100,000.....	17 per cent
Cities 5,000 to 100,000.....	44 per cent
Cities under 5,000.....	52 per cent

The Speaker: One of the outstanding features of Michigan's program of the Medical Economics Committee has been its factual basis. Nothing has demonstrated this any better than that which you have just heard. Without such evidence we could discuss this question of income all day, and at the end our conclusions would be the result of our reactions and not our knowledge. Reactions are difficult to support either privately or publicly.

My first opinion on reading over the plan (and I confess it was based upon no specific knowledge) was that MUTUAL HEALTH SERVICE should provide services for those of the very low income group. I felt that if the upper income limit was placed as high as \$2,000 the doctor's income would be reduced. This is in the nature of confession, but I tried to view the problem as practically as possible.

I have been especially interested in this chart arrangement. It is as new to me as it is to you. I had a further advantage in viewing this problem from knowledge that I acquired away, from my experiences in other countries, and I had seriously begun to fear the commercial company in furnishing the service to this moderate income group. When I find that 35 per cent of our families are in the income group between \$1,200 and \$2,000, that group would make a juicy morsel for any insurance company. It is the commercial agency that we must keep out of this picture. Fortunately, the facts show that this is not only possible, but that the doctor's income can be increased thereby.

At early meetings of the Medical Economics Committee and the Executive Committee, we were greatly helped in advice and guidance and judgment by Dr. Bruce. I personally invited Dr. Bruce to be present today. He was unable to, but he sent me the following letter which I will take the opportunity of presenting to the House of Delegates:

April 11, 1934

Dr. H. A. Luce
1551 Woodward Avenue
Detroit, Michigan
My dear Luce:

I regret exceedingly I shall be unable to be with you at Flint on Thursday. Please accept my thanks for your kind invitation, and also convey my thanks and best wishes to Dr. Le Fevre.

I have gone over carefully the report of the Committee and the plan. After our trip to Chicago it was apparent that the American Medical Association officials whom we saw were unsympathetic to study and experimentation by any State organization and, further, that if they had such information as the Michigan group sought, for some unknown reason, they were reluctant to give it to us.

Thus it became apparent that if we were to acquire the information, it would be necessary to go to Europe to obtain it. While I think we should try to protect the American Medical Association as far as possible, after all your duty is to Michigan, and the Michigan delegates are entitled to the evidence you accumulated.

[In this he refers to the report that was submitted to the Economics Committee and to the Executive Committee of the Michigan State Medical Society by myself and Dr. Sinai soon after our return. It is the report to which I referred when I said earlier in the day that we would be glad to read that report to you at any time you may wish it.]

I like the plan. It is moderate in tone and possesses a satisfactory tie-up with industry so necessary to the exclusion of expensive commercial insurance experiments, as well as the universally objectionable governmental control under which all European nations have suffered for years.

The idea of the Committee to experiment in but one or two counties, and at the county's own request, provides an effective safeguard, insuring the elimination of possible errors and permitting the evaluation of other details which a practical demonstration alone makes possible.

I share your regret that you had to use so much of your funds to disprove American Medical Association propaganda. This regrettable expense will probably leave you short of funds for the demonstration of the plan. I do not know whether Mr. McGregor will feel like making a further contribution, but would have no hesitancy in asking him. Michigan's outstanding contribution to medical economics and in postgraduate education are attracting such widespread

attention that if the delegates decide to accept the Committee's recommendation, and Mr. McGregor is unable to give further help, I know at least of one other source from which you may confidentially look for financial assistance.

Cordially yours,

JAMES D. BRUCE.

In order to properly conduct our organization, at my request certain resolutions were prepared. It would be a difficult matter to prepare those resolutions today. Those resolutions were prepared at my request in order that the subject matter might be brought properly before the House.

Dr. A. P. Biddle (Wayne): Members of the House of Delegates: As you probably heard, in the beginning I felt very inimical to health insurance for the reason I felt it would limit the dignity of the profession, and also be inimical to its interests.

I find, after giving the matter careful study and after what we have heard today, that the time has come when we must recognize a condition and not a theory. I feel the time has come for action. No matter what action you take, we must give this matter consideration. It has gained such force throughout the United States that some action is going to be taken by everyone, and it is well for us to recognize that and take such steps as to protect not only the patient but the profession.

RESOLUTION OF APPROVAL

Therefore, Mr. Speaker, I would offer this resolution simply as a starting point of discussion for what may follow.

WHEREAS, the House of Delegates of the Michigan State Medical Society, at its meeting on July 12, 1933, directed the Committee on Medical Economics to prepare and present for consideration of the House a plan or plans for health insurance; and

WHEREAS, the House of Delegates adopted the following policies for the guidance of its Committee on Medical Economics:

- a. Free choice of a physician by the insured.
 - b. Limitation of benefits to those of medical service.
 - c. The control of medical service benefits by the profession.
 - d. The exclusion of individuals or organizations that might engage in health insurance for profit.
- and

WHEREAS, the plan for MUTUAL HEALTH SERVICE presented by the Committee on Medical Economics is in accord with the above policies; therefore, be it

RESOLVED, that the House of Delegates of the Michigan State Medical Society approves the general principles of the plan for MUTUAL HEALTH SERVICE, and directs the Committee on Medical Economics to undertake the following efforts:

- a. The discussion of the plan with employers and employes.
- b. The determination of the legal status of the MUTUAL HEALTH SERVICE, and the necessary legal action for the organization of MUTUAL HEALTH SERVICE.
- c. Preparation of the final detail plan of the MUTUAL HEALTH SERVICE and its presentation to the House of Delegates for final action;

and be it further

RESOLVED, that the plan for MUTUAL HEALTH SERVICE shall not be inaugurated in any county without the approval of the county and state medical society.

The Speaker: Do I hear support?

Dr. John A. Weesinger (Washtenaw): I arise in support of the resolution as offered by Dr. Biddle.

Dr. A. V. Wenger (Kent): I support Dr. Biddle's resolution.

Dr. L. G. Christian (Ingham): I arise to support this resolution with a word that this is the doctor's

way of doing things. We never hesitate to use laboratory animals, the guinea pigs, rabbits or dogs, so we should choose some county in our state as the laboratory animal for this plan. In six months or a year all of the bugs will appear in our plan. If it is unworkable, we will have the finest evidence that has ever been presented in this world to the sociologist, and to the medical profession that health insurance is not a workable thing. If it is workable, our puny efforts to stop it will not stop it.

I was interested a little while ago in reading Morris Fishbein's comment on the platform of the socialist party of 1912. There were twenty-three planks in that socialistic, radical platform, and twenty-one of those planks had been adopted and enacted into laws.

If it is progress, we can't stop it; if it is wrong, we will find out.

Dr. F. T. Andrews (Kalamazoo): I wish to commend the Committee on this wonderful report which they have presented at this time. It is with a great deal of pleasure that I second the motion as presented by Dr. Biddle of Wayne.

Dr. B. R. Corbus (Grand Rapids): It just occurs to me, Mr. Speaker, that there might be some danger in a county taking up this work in a district which would not perhaps serve the purpose of the Medical Economics Committee because of conditions which exist. Would the House of Delegates feel it might be wise to put in that resolution this qualification, that no county shall institute this plan without the consent of the State Society?

The Speaker: Dr. Corbus, if you will permit me to read a part of the last resolution in which it states: "And be it further resolved that the plan for MUTUAL HEALTH SERVICE shall not be inaugurated," do I understand you to say that must have the approval of the State Society?

Dr. Corbus: Yes. My thought was that it ought to work both ways, that the County Society should not act independently of the State Society, and should not put into operation this plan or any plan without the consent of the State Society, feeling that the Economics Committee and the State Society might feel it was not wise for this particular county to undertake the pioneer work.

Dr. C. S. Gorsline (Calhoun): Having been somewhat interested in this economic survey in times past, and still interested as much as ever, the thought occurs to me that instead of using one guinea pig it might be well to use about three, with this in view: that no one county, for instance, would give us the proper facts and experience from which conclusions could be drawn for the whole state. It is my thought that possibly the Committee should be given power to select three representative regions, not necessarily three but that is the number that occurs to me: Perhaps one embodying a place like Detroit, which is highly developed in certain lines; another one, a typical rural community; and possibly a third of an intermediate status.

I arise to second the motion in regard to the resolution the doctor offered, and to offer this as a suggestion that might be contemplated in this resolution.

Dr. W. C. Ellet (Berrien): May I ask the Speaker if he will once more read the three or four principal points of that resolution, without the preamble, so that we may understand it completely.

The Speaker: We have a Secretary for that purpose.

The Secretary re-read the resolution.

Dr. A. P. Biddle (Wayne): If it is proper, I would like to put in that Dr. Corbus' suggestion.

The Secretary: That is included in the plan because it gives control to the Board of Censors.

The Speaker: Is that satisfactory, Dr. Corbus?

Dr. B. R. Corbus: I recognized that when I spoke. I felt that since things are not briefed in this resolution it might be well to place that in.

Dr. A. P. Biddle (Wayne): I wish to include that in the resolution, and my seconder approves.

The Secretary: "Without the approval of said county and State Medical Society."

Dr. Biddle: Is that all right, Dr. Corbus?

Dr. Corbus: Yes.

Dr. T. F. Heavenrich (St. Clair): "Without the approval of the County Medical Society and the State Medical Society," does that mean the State Medical Society in annual session or does it mean the Council or the Executive Committee of the Council, or the House of Delegates?

The Speaker: The Speaker would interpret that as the House of Delegates, if the House of Delegates were conveniently in session or about to be in session. The State Constitution provides that the Executive Committee of the State Council, in the interim, assumes the duties of the House of Delegates, and in emergencies.

Dr. Heavenrich: The Council does?

The Speaker: The Council does.

Dr. Heavenrich: Would it be the Council or the Executive Committee of the Council?

The Speaker: The Chair will interpret that as the Council, because they can be polled by mail. If there is no objection to that interpretation, it will be so ordered.

Dr. W. C. Ellet (Berrien): Under Resolution c, do I understand that can be presented at this meeting of the House of Delegates, or must that be taken up at the next regular annual meeting of the House of Delegates?

The Speaker: "Preparation of the final detail plan of the MUTUAL HEALTH SERVICE and its presentation to the House of Delegates for final action."

I would think this would answer your question, Dr. Ellet, that some time it is going to be necessary for the Economics Committee to prepare this material. If the State Society Executive Committee decided the situation demands another special meeting of the House of Delegates it will be called. If not, that matter could wait until the September meeting. Does that answer your question?

Dr. Ellet: Thank you, sir.

Dr. B. L. Connelly (Wayne): We are setting up an experiment, and I think anybody who understands experimentation must realize you have to have a control. We are just setting up one side of this experiment. A certain amount of experimental work has been done before, but not at the same time that the rest of this experiment is going on.

If this plan is set up in various counties, it is my suggestion that an adjacent or similar county be used as the control for this experiment, and the same study be made of the practice of medicine as it is carried on in this county under the present system. Therefore, you have a perfectly controlled experiment.

Dr. E. D. Spalding (Wayne): If this is open for discussion, I would like to raise a question on Page 14 of the report, at the top of the page. It says: "These expenditures" (according to the chart here) "were for services actually purchased, not for all the services needed. There are no data upon which accurate predications of this increased demand may be based."

If a man under economic stress and strain purchases a certain amount of services, that is one thing; but if his employer has subsidized his medical service there is no telling how often the physician will be called.

I see nothing on these charts to indicate the amount of service that will be demanded under the set-up as proposed.

I also would call attention to one other thing on Page 19 of this report, where it says: "Such an arrangement" (referring now to the MUTUAL HEALTH SERVICE being applied to indigents) "will permit the unemployed and indigent person the same relationship to his general practitioner as he enjoys while employed."

This is, in my estimation, simply an encouragement to indigency. If a man can get all the benefits of life without working, I think he would be a damned fool to work.

Dr. C. S. Ratiigan (Wayne): I think Dr. Spalding is absolutely right in this thing, and I think the present conditions are bearing that out very well. The fact that a man on the welfare can get more than he can working at the Ford Motor, or any other industrial concern in Greater Detroit, in the ordinary lower brackets encourages indigency.

Another thing is that we are putting the cart before the horse here. We are starting out on the premise that the employer and the industrialist are going to take this over and accept it. We have no data whatsoever that he will. I spoke to one of the biggest industrialists in that district before leaving, and he said the industrialists are not going to permit things of this type to be choked down. With this question of strikes and everything else that is being put on to them, they are certainly in no mood at the present time for something like this. I think the Committee, before they go any further, should contact them.

Dr. D. P. Foster (Wayne): As I have read this report I have read nothing in it which gives any intimation at all, to my mind, as to who is really going to pay for this insurance. If the Committee Chairman has any ideas in the matter which should be known, I would very much like to hear them at this time.

The Speaker: Dr. Sinai, will you kindly answer these three questions while they are fresh in our minds?

Dr. Sinai: Mr. Speaker and Members of the of the House: In connection with the first question presented by Dr. Spalding as to what amount of service will be demanded, there are no data available in the United States or anywhere else in the world that I know of which will answer that question. That is one of the pertinent questions which we hope will be answered if the experiment is undertaken anywhere. It is a question that has been asked all over the United States, and some have suggested that we go to Europe and look at the figures in Europe for the determination of how much service will be demanded, and that is a fallacy because it isn't available in Europe. The information

there is all mixed up with the cash benefits, which makes it impossible to determine why a man goes to a physician; whether he goes there in order to "go sick" and secure cash benefits, or whether he goes there for medical service. That same thing applies even in those systems in Europe that state they will provide all service, and certainly it applies to the English system.

Relative to the question of the indigent and indigency, we have now a vicious problem in the medical care of the indigent. Some method must be devised whereby a professional group, merely because of its previous willingness to bear the complete burden, may be somewhat relieved of that burden, and it is for that reason that your Committee stressed the matter of unemployment insurance.

If unemployment insurance reserves are set aside, it seems that the right and proper thing is to earmark a certain percentage of those reserves, either paid for by industry or paid for through wage deductions, whichever system may be the one adopted by the Congress or by legislatures, for medical care so that for the same period the individual is cared for through unemployment insurance he will also have purchased the commodity of medical care. All of the other money in unemployment insurance is intended to provide that individual or his family with commodities, and medical care is one of the commodities. It is an unpredictable commodity and there has been no attempt at all, either in Europe or in the considerations in this country, to earmark a certain amount of funds for medical care.

When it comes to the care of the indigent and the reference in the report to the relationship between the indigent person and his family physician being exactly the same, I want to say it is not intended, on the part of the Committee, that it should be exactly the same in that all of the services bought and paid for in the MUTUAL HEALTH SERVICE would be provided without any cost at all to the individual. You will find that certain services must be restricted: A certain percentage of hospitalization, a certain percentage of other types of service, in the opinion of the family physician of the indigent as to what is necessary, the minimum, for that indigent family.

It seems to me this is the beginning of the first bite into the problem of indigent medical service, and that if the community is going to assume the third party relationship and is going to assume the place where industry is placed in the MUTUAL HEALTH SERVICE, then the same system exactly must obtain, must follow.

That brings up the question as to where will industry stand in this matter? Nobody knows, but I would like to bring to your mind the fact that certain industries are pointing the way to the new relationship between industry and the worker. The Wrigley Chewing Gum Company recently announced a plan for unemployment insurance. It wasn't legally called for, either. Wisconsin has already passed a bill and it is in process now of being applied. The Wrigley Company also provides hospital insurance for employees. The industrialists to whom I have talked feel they would much prefer not to handle such an item as medical service, but they would prefer to purchase that on a flat rate and have the misery of control and the difficulty of administration fall into the hands of those who are better qualified for administration.

I agree with the speaker who said that industry is not going to accept this without some cry, but I point also to a historical fact, that back in 1908 and in 1912 industry did not accept Workmen's Compensation and neither did the medical profession, but Workmen's Compensation is to be found in forty-two states.

If this is right, as has been brought out, nothing can stop it; if it is wrong, it will stop itself. What will be the statement of industry, no one knows. What will be the statement when the Committee discusses the matter with certain industrialists and certain labor groups, no one can say. But the Committee certainly does not feel that it should go and talk with industry or talk to labor or talk with the public until the House of Delegates has considered the program and has considered its principles and has approved such conversation.

In an experiment, the reason for the experiment is that we don't know things, and I think in what I have said I have demonstrated that we don't know plenty. At the end of six months or a year, if you accept the plan and direct the Committee to proceed, the hope is that you will know, and that through your knowledge American medicine and the American public also will know and be directed.

Dr. S. W. Insley (Wayne): Possibly Dr. Ratigan spoke to a different type of employer than the one with which I have been in contact in the last few weeks. I would like to bring out some points here which might be of interest. I am going to try to stay away from opinions as far as humanly possible. I think some of the points may be of interest to the men here today who are considering this plan.

Our Committee sets up a figure of approximately \$27.88 as the estimated yearly cost per capita for medical expenses. They have been informed that these are for actual expenditures found in a research and not for what might be actually required under ideal conditions. This suggests that a still higher figure might be later found necessary.

Our Committee suggests that employee, or employe plus employer, shall pay this amount in certain advanced installments. I have been informed that a very large employer in this district does not look upon such a plan with favor. The employers' ideas have a very respectable foundation, and I might add that they have plans of their own to meet such a situation and cope with it and, incidentally, save themselves a tremendous sum of money.

Employees have been questioned in regard to this plan. They were not selected and they were not indigents. An ordinary wage earner with three or four children was in no instance willing to pay from \$139 to \$167 per year, as according to this plan. Their language, after an explanation of the idea, was often of a most picturesque type. They absolutely could not see the idea of paying in from \$12 to \$14 a month, sick or well, for the indefinite years to come.

That little summary of mine might be misconstrued, but it might be well to remember that in the past years, through the boom and everything, health insurance voluntarily bought was never carried by a very large number of people, less than 2 per cent.

Suppose the average American-bred, respectable wage earner did not like this MUTUAL HEALTH SERVICE. And, next, suppose employers were not so favorable to the scheme. I do not for one moment expect a proponent of this plan to be unaware of these possibilities. They have been mentioned today and they must have an alternative. Is this alternative a form of state medicine, the cost to be borne by taxation?

The appalling consequences of these plans and of their own figures should cause us the deepest concern. We shall either be taxed into submission with the stagnation of every American principle, or be forced into a communistic regimentation of every necessity of life.

I shall quote their own figures. The majority of the report of the Committee on the study of Medical Costs estimates the costs of medical service, drugs, hospitalization, and so on, at about \$30 per year for every man, woman, child and baby in this country. That is spread out over the entire United States, and they are proud of that figure. Multiply this figure by 125,000,000, our present population. The sum reaches an astonishing total of \$3,750,000,000 per year. Thinking of that amount in the sense of taxation, it is greater than the total United States income taxes for the year of 1929. What a peculiar figure to be dealt with over and above our present crushing federal debt!

Suppose we apply this type of medical service to the state. Our worthy medical research for Michigan here has estimated the per capita health cost for Michigan as \$27.88 per year. Our state government, with all its waste and inefficiency, has been able to climb to a per capita rate of only \$23 per year. Can you visualize an attempt to more than double this present tax figure to the public in their present mood?

Let us localize this plan to Detroit. Can you, in all sobriety, imagine an increase of from \$30,000,000 to \$35,000,000 per year to the present tax budget of Detroit? I might ask some of the gentlemen of Grand Rapids, Flint, Saginaw, Bay City, and some of the counties further north, to localize this plan to their particular communities, and

then estimate what it would mean in your present tax budgets and tax assessments.

There has been mention of the extension of this plan to the indigent. You can pass that off. There is a little bit of opinion mixed up in there. Aside from not mentioning the indigent and the men in the higher income brackets, it seems to me that under the present set-up of these new era plans the average wage earner has been getting the short end of the stick through this whole depression. Including these present days and including this present set-up, he has, in this plan, for example, the double distinction of a doubtful service plus the privilege of paying the freight. I have an opinion, but I think at the present time I will leave that opinion absolutely alone.

I simply took this occasion to prepare some of these figures and offer them to you for your consideration.

Dr. W. C. Ellet (Berrien): May the House have the reason for the A. M. A.'s adverse opinion to this plan?

The Speaker: Dr. Ellet, the Chair will have to rule that that part of the matter can be dispensed with until we have disposed of the resolution. Then we will get it.

Dr. F. W. Garber, Sr. (Muskegon): I am wondering if it might not help us somewhat to clarify this statement in which it is mentioned that the total amount owing to the physician is something like \$5.80. I don't quite understand that. I am only asking a question for clarification. Does it mean that in a family group of five the head of the family has to pay \$27.88 per annum for each member, or does he pay only that portion which comes under the head, for instance, of physician's rate, and how is that arrived at? What I mean is this: How much is the ordinary practitioner, who has, say, a thousand persons under his care, going to get out of that for himself each year on that assumption?

Dr. D. P. Foster (Wayne): Might I rise for a point of order and ask that my question, which you asked to be clarified but which was not touched upon at all, be discussed at this time? What is this Committee going to go to the employer and ask him for?

The Speaker: That will be discussed.

Dr. L. O. Geib: I would like to ask for more information. I think you referred to an address or a report on your trip to Europe and your conclusions. I think that report should be presented at this time so we can get a clear view of the situation.

The Speaker: If it is the desire of the House that the European report be presented at this time, that will be complied with.

Dr. C. F. Moll (Genesee): I move that this report be now submitted to this House of Delegates.

The motion was regularly supported.

The Speaker: Is there any discussion? Those in favor say "aye"; those opposed say "no." It is carried.

The Secretary will read the report entitled, "Luce-Sinai Report to the Executive Committee of the Michigan State Medical Society." I would beg permission to interrupt the Secretary at a point to add some information which was not available at the time this report was written.

LUCE-SINAI REPORT

The Secretary: This report was presented to the Executive Committee of the Council of the Michigan State Medical Society on the twenty-second day of February, 1934, and by action of the Council was transmitted to the Chairman of the Board of Trustees of the American Medical Association on February 23 by registered mail, for which I hold a receipt as having been received on February 24.

HEALTH INSURANCE IN FOREIGN COUNTRIES

Your commission presents the results of its study as a collection of factual evidence. The study was undertaken through a joint grant of funds from the Michigan State Medical Society and the American College of Dentists. The latter organization financed a study in 1931 and desired to cooperate in bringing its material up to date. Actually, the need for study grew out of conflicting viewpoints and information.

When the Michigan State Medical Society approved the preparation of a plan for health insurance, the action implied that the Society was not antagonistic to health insurance, *per se*, and was preparing to consider it *providing a plan could be developed in conformity with its adopted policies*. There is a sufficiency of editorial evidence that the public welcomed this demonstration of medical leadership.

Shortly after the State Society's action certain articles, prepared or sponsored by national officials

and dealing with the subject of health insurance, began to appear. The direct or implied criticisms in these articles and the direct or implied conclusions flowing therefrom could mean only one thing: the program of the Michigan State Medical Society was ill-conceived and dangerous.

Three courses of action were open to the leadership of the State Medical Society. The first (and easiest) would have been to stop all work in connection with the program, thereby impugning the judgment and negating the work of the Committee on Medical Economics. The second course would have been that of continuing the program in the face of all criticism. If this were done the leadership in Michigan would have become suspect to both the practicing physicians in the state and the profession in other states.

The third and most logical course was followed, that of a study. It must be plainly understood that the study, made in the short period of six weeks, was not intended as a minute inquiry into the whole structure and functioning of health insurance. Briefly, its purposes were as follows:

1. To determine the success or failure of health insurance in meeting the medico-economic problems of the public and the professions.
2. To secure evidence upon which the Michigan State Medical Society and the American College of Dentists might base a definite policy concerning health insurance.

The commission was not unacquainted with the history and the operation of health insurance in England, where, because of the circumstances necessitating the study, the major part of the survey was made. The present findings deal with the English system. A later report will concern itself with certain phases of health insurance in other countries.

During the study three questions arising out of the direct or implied conclusions from publications in the United States were kept in mind constantly:

1. Is the operation of health insurance unsatisfactory to either or both the profession and the public?
2. Has health insurance exerted a deteriorating effect upon the quality of medical service?
3. Is health insurance constituting a grave financial drain upon England and is the system itself in danger of financial collapse?

Relating to these three questions the commission collected official reports and other data. Particular emphasis was placed upon interviews with officials of the professions, practicing physicians, government officials, and laymen. In order to prevent any charge of misinterpretation, the rough notes of all important interviews were copied in triplicate and two copies mailed to the individual interviewed. An accompanying letter requested the return of one copy of the notes with any comments, changes, or additions thought necessary. The returned copies, therefore, amount to signed statements.

From the English viewpoint, as well as the American, the major defects in the English system are fairly obvious. One is that the statutes provide only for the home and office medical service of the general practitioner to the insured patient. The other is the association, with the medical service benefit, of sickness cash benefit for 26 weeks, of disability cash benefit for periods subsequent to 26 weeks, of maternity cash benefit, and of other cash benefits from an insurance society's surplus.

Out of the second major defect arises most of the controversy in England because upon the general practitioner is placed the burden of certifying that the insured patient is entitled to cash benefits. Hence, the controversy dealing with "over-certification" by physicians and with increasing sickness rates. It was in full recognition of this attempt to mix the in-

compatible elements of medical service and cash that the Michigan House of Delegates adopted its policy limiting the proposed plan to service benefits.

The attitude of the British Medical Association toward the principle of health insurance is shown by the following "fundamental principles" contained in the organization's "Proposals for a General Medical Service for the Nation" adopted in 1930:

1. That a satisfactory system of medical service must be directed to the prevention of disease no less than to the relief of individual sufferers.

2. That the medical service of the community must be based on the provision for every individual of a general practitioner or family doctor.

3. That a consultant service and all necessary specialist and auxiliary forms of diagnosis and treatment should be available for the individual patient, normally through the agency of the family doctor.

4. That the interposition of any third party between the doctor and the patient, so far as actual medical attendance is concerned, shall be limited as possible.

5. That as regards the control of the purely professional side of the service, the guaranteeing of the quality of the service, and the discipline of the doctors taking part in it, as much responsibility as possible should be placed on the organized medical profession.

6. That in any arrangements made for communal or subsidized or insurance medical service the organized medical profession should be freely consulted from the outset on all professional matters by those responsible for the financial and administrative control of that service.

7. That medical benefits of the present National Health Insurance Acts should be extended so as to include the dependents of all persons insured thereunder and entitled to medical benefit.

8. That every effort should be made to provide medical and nursing service facilities in institutions (Home Hospitals) where the family doctor may treat those of his own patients who need such provision and who can thus remain under his care.

It has been said many times that the British Medical Association unwillingly adopted these proposals purely as a defense measure. A more recent action by the British Medical Association throws some light on this contention. If the above principles were only defensive the Association would have been content if they remained "paper principles."

In April, 1933, the Association published a memorandum dealing with "Public Medical Service." The memorandum was an activation of Principle VII. Public Medical Service is a plan of voluntary insurance for the dependents of those insured under National Health Insurance. The plan provides only for medical service and is being developed in a number of places in England under the control of the medical profession.

At this point some of the statements of Dr. A. H. Cox, recently retired secretary of the British Medical Association, Dr. G. C. Anderson, the present secretary, and Sir Henry Brackenbury become appropos. These statements refer to the satisfaction or dissatisfaction of the profession with health insurance. They are presented from the approved notes without comment.

Dr. Cox held office at the time England adopted health insurance in 1911 and his memory of the trying events of that period is especially vivid. Now, over twenty years later, his opinions, which follow, are the mature ones of experience coupled with perspective.

With reference to the policy of the medical profession towards health insurance, it was emphasized that the profession should be first in the field with plans and program. It was

further emphasized that there is grave danger in waiting for action to be taken by the public or the politicians. "If the doctors don't know what is necessary in medical care, who does?" "We were not prepared for a health insurance in England."

If the profession had been first in the field with a plan, there would have been saved much bitter feeling within the profession as well as loss of public prestige. Up to the last minute the profession reiterated its stand against any participation in a scheme of health insurance. At a meeting in November, 1911, the feeling against health insurance ran high. In general, it may be said that the leadership in this course was taken by men not in practice among the general population. As evidence of the feelings within the rank and file, Dr. Cox had, at the November meeting, letters and telegrams from members of the profession, stating that the health insurance scheme appeared to be good, and evidencing a willingness to give it a trial. This evidence was not presented at the meeting, the information being withheld on motion by a gynecologist who was, however, supported by a large majority of men who were in general practice, but who at the time were in a state of great emotional excitement. Within a little more than a month, the action taken at the November meeting against participation in health insurance was rescinded. As a result of the conflict within the profession, years were required to close the gaps between different groups.

In spite of the statement of Lloyd George, that he had consulted everyone prior to the introduction of his Insurance Bill, he had not consulted the profession until directly approached, and at a comparatively late stage. As a result of this approach, the Bill was radically altered. If the profession had adopted a policy, the conflict could have been prevented, or at any rate its violence mitigated.

The struggle that took place before the Bill was adopted almost split the British Medical Association. One group within the organization included the antipanel men. Some of the panel physicians, feeling that they were not regarded highly by the British Medical Association, tried to form their own organizations. This was forestalled by the British Medical Association calling a meeting of the insurance physicians, forming a committee which should directly represent their interests.

During the fight, membership in the British Medical Association increased greatly. Following the adoption of the insurance, there occurred an abrupt decrease. At present the membership is larger than ever, but it took some years to get over the prejudice.

As a result of its experience, the British Medical Association has learned to handle and direct the thinking of the public and the politician. There is no longer such a tendency to "demand" but rather to persuade.

Dr. Cox re-emphasized the need for permitting the voice of the man who is in practice to be heard and heeded. He acknowledges with gratitude the help that the general practitioners have always had from some of the consultants, but when it comes to setting the terms on which the general practitioners are to be employed, the opinion of outsiders should not have too much weight.

Only by education will it be possible to make the physician see that a *block* of patients, paying so much per year, will pay more than a few who become sick and call for his

services. A usual tendency at the beginning was for the physician to look upon the patient who was sick as receiving services to the value of one or two pounds (\$5 or \$10), for 8/ (\$2), counting only the persons he saw and not those who never came but were paying all the time.

The profession must say to the public and the politicians, "If you give us responsibility, we will provide good service." This places on the profession a heavy burden of responsibility, that of seeing that the service is good. In the beginning, such a policy engenders a good deal of friction, but for all that the policy must be strictly adhered to. A short-sighted doctor is apt to think his association must stick up for him whether he is right or wrong. An organized profession can only obtain a large amount of responsibility for the quality of the service if it puts the interest of the public first.

Dr. Anderson, the successor to Dr. Cox, approved the following notes:

The British Medical Association has adopted a policy of free choice of physician for the people receiving medical service under the Poor Laws. It has been difficult to make progress in this direction, because the laws provide for "poor physicians." In the few places where free choice has been granted, it is only because its adoption coincides with the retirement of the "poor physician."

Dr. Anderson discussed the Public Medical Service, a voluntary medically controlled organization. If and when a more comprehensive medical service program is adopted by the Government, the medical profession, through its experience with a broader program, will be in a very strong position to advise the authorities.

Payment for hospital staffs is increasing outside of London. The Merseyside contributory hospital scheme in Liverpool sets aside 10 per cent of the money collected by the hospital for the attending staff.

Not one in a hundred physicians would leave panel practice. In England it preserves the major element of private practice. There are some die-hards who are opposed, but they failed to carry their opinion by a large majority in 1924.

The main criticism of health insurance comes from those with little or no experience in its operation or practice.

Health insurance has stabilized the practice of the general practitioner; as the system now operates, the Ministry of Health makes no changes in medical service without consulting the British Medical Association. The same holds true for other Government departments dealing with medical subjects.

In support of the last note Dr. Paterson of the Ministry of Health made the statement that:

"The Ministry of Health consults the British Medical Association before taking any action relative to medical service. Although the Ministry has the right to act without such consultation, its policy is to consult."

Sir Henry Brackenbury, who provided information on the same general subject, has a background of many years in general practice in addition to service as Chairman of the Council of the British Medical Association. He received the Knighthood following the presentation of the case of the British Medical Association before the Royal Commission in 1926. As a result of his presentation the capitation fee to the physician was increased. It would be difficult to

find any medical practitioner in England who is held in higher esteem by the profession.

In discussing the article appearing in the Bulletin of the American Medical Association (December), Sir Henry said that the article missed entirely the setting of the meeting. He was speaking primarily to laymen and wished to bring to their attention certain defects in the system of health insurance. The main purpose of the talk was to point out the need for the separation of cash and service benefits. The medical profession emphatically favors medical advice and treatment through insurance.

The doling out of cash raises many new questions. As far as doctors are concerned, their only interest in cash benefits is that of citizens. Professionally, they are neither competent nor have they any desire to present a program for "unemployment insurance."

On the question of certification, Sir Henry stated that, in his opinion, the controversy arises through the doctor's misinterpretation of his position in the scheme. Too often a certificate is issued on a basis of the question, "Would a rest do the patient good?" and not, "Is the patient entitled to cash benefits under the insurance rules?"

In its comprehensive program, the British Medical Association proposes: first, to extend medical service to the dependents of the insured (this may be taken as evidence of professional approval of the system); second, the inclusion of consultative and other services.

The British Medical Association wants the right of free choice to be extended to people who are provided with service under the Poor Laws. This refers to the patients who have been taken out of the insurance system and must depend upon local assistance for medical care. The British Medical Association is hopeful that eventually the Poor Law authorities may act *in loco parentis* and pay an amount equivalent to the insurance premium to the insurance organization. Meanwhile, it is emphasizing free choice.

If health insurance were to start anew, the Approved (Insurance) Society should have no place in the system.

Any statement that Sir Henry is opposed to health insurance for the provision of medical attendance and treatment is "directly contrary to the truth."

Further light on this subject is contained in the interviews with Dr. Burgess and Dr. McGowan of Manchester. Both are medical practitioners with experience before and after the adoption of health insurance, and Dr. McGowan has been Secretary of the Manchester Panel Physicians' Committee for fifteen years.

(Dr. Burgess) If a vote were taken today on whether or not the panel system should be discontinued, the vote would be unanimous to retain the system. It is the desire and the purpose of the profession to extend its scope.

(Dr. McGowan) From the standpoint of morale, I wish health insurance had never been established, although the physician would not have come through as well financially. Relative to the "morale" of the profession, Dr. McGowan felt that a plan such as that of the Public Medical Service would have been better.

The body of the profession has been keener on commercial things, especially with reference to the sale of practices.

For fifteen or sixteen years the system in

Manchester provided for payment to the physician according to the services rendered. Dr. McGowan preferred this system because it was nearer to actual private practice. The reason for changing the system arose from the fact that certain men in the profession took advantage of it.

Among the younger men in practice the only apparent dissatisfaction is with the limitation of the service under health insurance. The conclusion of your commission is that from the professional standpoint there is little dissatisfaction in England with the fundamental purpose and the general operation of the medical services provided for the insured group.

But what of the patient and the important question dealing with the quality of service? If general comparisons are ever odious they are particularly so with respect to the quality of medical service provided in one area as against another or in one country as against another. Quality of service is a compound arising from a mixture of many elements: the training of physicians, the adequacy of facilities, customs, public education and a multitude of other factors.

In England, as well as in the United States, one may secure evidence to support any opinion concerning either good or bad practice. Arguments based upon comparisons between England and the United States could go on endlessly. Therefore, your commission limited itself to the question: Since health insurance was adopted, has medical service improved or deteriorated in England? This limitation served to reduce the variable features of practice. Without such limitation, any statement would be meaningless.

Again your commission presents the English opinion in the following notes:

(Dr. Anderson) Relative to the quality of service, Dr. Anderson stated that in his opinion it is infinitely better now. In determining quality, the vision is often colored by certain situations in London. In other parts of England, Scotland and Wales, and indeed in most parts of London, the standard of service is high.

In 1911 the public was provided with inadequate medical service. While the service is better today, it is still inadequate. The answer appears to be the more comprehensive scheme of the British Medical Society.

In London there is undoubtedly an abuse of service in hospitals through the tendency of some physicians, to refer too many of the cases and the tendency of the Boards of Management to encourage attendances in order to give opportunity for popular appeals for funds.

The panel doctor provides treatment for his patient suffering from industrial or other work accidents. For specialist care, patients are referred.

(Dr. Cox) In the beginning of Health Insurance the public was strongly suspicious because the system was new and people were fearful that unless they paid on the "per call" basis, the physician would have little interest. In order to overcome this, the British Medical Society adopted a policy of education. Most of the emphasis was placed upon the improvement of the medical service, to the end that the insurance service would become one in which the profession could take pride.

Prior to Health Insurance, there were many six-penny and shilling practices, in which the physician gave the cheapest kind of service. In addition, there were the Friendly Society

Clubs, in many of which the service was of low quality and very badly paid.

Gradually, through the educational program of the British Medical Society, and the gradual pressure of the Panel Committees, the man who is providing poor service is being eliminated, or at any rate controlled.

Dr. Cox gave it as his opinion that the man who is now serving his (Dr. Cox's) patients in an industrial community, is giving these patients better service than they received before, because it is possible for him to provide many things without cost to himself (the doctor), and without undue burden to the patient, and the patient has no excuse for not seeking advice.

One of the functions of the Insurance Committee is to see that better accommodations for the care of the patient are provided by the doctor. There is little doubt that there may be found that type of practice where the service is decidedly impersonal and routine. This type of practice is being eliminated. In industrial areas the general level of quality has been raised.

One of the important features of insurance is the permission granted the insured to change doctors when dissatisfied. In the old days of club practice, no such change was permitted. The only way a doctor could lose his club patient was through the loss of the whole club, and if the patient was dissatisfied, he could only get another doctor by paying for him outside of the club.

The question of the tendency of the panel doctor to refer patients to Voluntary Hospitals was discussed. Dr. Cox stated that undoubtedly this tendency exists and that there is now a move to make the hospitals serve as diagnostic aids to the general practitioner, and to receive patients on a letter from the doctor. Some hospitals decline to receive insured persons as out-patients unless they have a letter—except casualties and emergencies.

(Sir Henry Brackenbury) The comment concerning quality of service was that there is no use comparing the worst type of insurance practice with the best type in private practice, or in out-patient hospital practice. If averages are compared, it is Sir Henry's opinion that the general level of insurance practice would be fully as high as that of private practice.

It was stated that insurance practice has two restraints: one, loss of patients; and two, the control developed by the insurance system. In private practice, the only restraint is the loss of patients.

It was pointed out that while the profession is not inclined to be less scientific under an insurance system, the chances of commercialization are rather more easy. By "commercialization" is meant the transfer *en bloc* of patients from one physician to another who purchases his practice. This makes it easier to buy and sell practices, since it is estimated that not more than 2.5 per cent up to 5 per cent of the patients on a list will make a transfer when a surgery is taken over by a new physician.

Public health has improved because now men of first class character find it economically possible to practice in poor areas. Previously, in these areas, patients had no services or visited chemists or out-patient departments.

(Dr. Paterson) Dr. Paterson is satisfied that the standard of treatment is immensely better for the insured group than it was be-

fore panel practice. The treatment is better in many cases because the physician may order items which could not be afforded by the patient. There is no limitation upon drugs, providing there is reason in the order. In England, the average cost of drugs amounts to 2/10d (70c). In Scotland it is only 1/11d (47c). The reason for the difference is largely traditional. In Scotland, medical practice has always been divorced from dispensing. In England the patient always has come away with a bottle.

(Dr. McGowan) He feels that there has been no effect on the standard of treatment under health insurance. The patients are generally satisfied as shown by the fact that, though Manchester has 380,000 insured people, the insurance committee has received only 105 complaints in 21 years.

In addition to members of the profession in official positions and in practice your commission questioned many laymen. These included people in the insured group, the physician's patients, as well as representatives of the press. The interviews supported the professional opinions and professional criticisms that have been presented.

Associated with the subject of quality is that of postgraduate training for the physician. Here again comparisons are difficult, but certain statements are presented as of interest. It is your commission's opinion that there is as little justification for stating that the lack of postgraduate training is the result of health insurance as for stating that it persists in spite of health insurance.

(Dr. McGowan) Relative to postgraduate training, there is an increasing desire for this type of work on the part of the younger men. The desire is not so manifest among senior practitioners.

(Dr. Cox) Undoubtedly postgraduate requirements will eventually develop in England. At present the only development for postgraduate training has been through a small fund set aside for the training of rural panel physicians. With the development of the new postgraduate school in London, it is expected that impetus will be given to the continued training of the physicians. At present the building for the postgraduate school is completed and a superintendent has been appointed, but not yet a staff.

The question concerning the financial structure of health insurance, like the question of quality and satisfaction, must be viewed from the standpoint of cash and service benefits. Any concern felt over the finances of health insurance originates from the increase of cash benefit claims and not from the costs of medical service. The costs of such service have been reduced 10 per cent for the past year through a joint agreement with the physicians. The Approved (Insurance) Societies still maintain huge cash reserves. In the 1932-33 report of the Minister of Health, the accumulated funds at the beginning of the year amounted to 109,677,000 pounds (approximately \$548,300,000). At the end of the year these funds had increased to 109,789,000 pounds (approximately \$548,900,000).

According to recent Acts some of the surplus funds may be used to pay for the benefits of those persons who, by reason of unemployment, are in arrears. While certain persons no longer entitled to the benefits of Health Insurance have become community charges, it is significant that before becoming such charges they were carried by the societies without payment of dues for an average of about two years. As pointed out in one of the

notes, the medical profession is endeavoring to maintain these people in the insurance system through payments from community funds.

Vice Speaker Reeder assumed the chair.

The Speaker: Mr. Vice Speaker, if I may be allowed to interrupt this reading, I should like to say that in listening to this report it seems to be largely one-sided. We secured our information from every source possible to contact, from taxicab drivers, fellow passengers in railway trains, pharmacists and hotel clerks.

At this time I would like to speak in commendation of the favors and courtesies that were shown us by the British medical profession. The English doctor is one of the finest types of citizen I would care to meet. Perhaps the only criticism we received (and it wasn't exactly an adverse criticism) came from the London correspondent of the American Medical Association. However, in a late issue of the *American Medical Journal* he stated that the principle of health insurance was sound.

It might be of interest to know that the London correspondent of the American Medical Association is not and has not been for a number of years, if ever, engaged in the private practice of medicine, and there is no record available (we went back in the records over thirty years) that he had been at any time a member of the British Medical Association.

After our return, naturally information on this subject continued to come to us. With the permission of Dr. Clinton, I will read you extracts of a letter that was sent to him under date of December 13, 1933.

You will notice that the question has been raised as to the annual budget, and that a serious drain had been made upon the treasury by reason of this.

His answer is: "I don't think so. I understand health insurance is working quite satisfactorily as a financial scheme, and possibly your remark, therefore, is somewhat more true in relation to employment insurance."

Question No. 2: "That the working class do not receive as good medical service as they formerly did with individual practices."

Answer: "I have had interviews both with one of our ministers who has had long and varied experiences and also a working man superior in intelligence who is a governor of the infirmary here, and they both affirm that the act has been and is a great boon to the workers. Of course, both admit that malingerers and unscrupulous and discontented persons do make complaints, but those are the exception and not the rule."

Question No. 3: "That general medical men on fixed salaries have not the same initiative and do not progress or advance as formerly."

Answer: "All my friends repudiate that suggestion absolutely."

He made some suggestions. "If inaugurated in America, brook no interference from federated societies." As an explanation of "federated societies," that is comparable to fraternal societies in this country which may carry health insurance. The principle is the same in our country if we allow any insurance company to dictate this matter.

The Secretary: The next section of the report has to deal with "Dental Aspects."

The Speaker: That can be discussed later, because it will be of interest to only the dental school. Time is short. If that is agreeable, they can be assured that will be presented to them.

Dr. Prince: That will be agreeable.

DENTAL ASPECTS

The status of dentistry in the health insurance systems of England has not improved. Dental care still remains an

"additional," rather than statutory, benefit. The provision of this service depends entirely on the availability of surplus funds in the treasuries of the Approved Societies.

The number of members in those Approved Societies that maintained dental benefits has decreased from 14,000,000 to 11,000,000. This decrease, according to Dr. W. G. Senior, Secretary of the British Dental Association, has its basis in the ruling that permitted the Approved Societies to pay the accounts of its members in arrears from surplus funds. According to Dr. Senior, the added expense on these surplus funds reduced the money for additional benefits. In his own words, "The working member of the Approved Society is deprived of dental benefits in order that his less fortunate brother may have medical benefit." The view of the secretary is that arrears payments should be paid from government funds.

For some years the British Dental Association has advocated a national scheme of statutory dental benefits comparable to that for medical care. While little progress in effecting the program has been made, the British Dental Association has prepared a formal plan and is agitating for its adoption. The plan provides for dental benefits for all those who are insured under the present Act. As is the case in medicine, the plan provides for "free choice" of dentist and payment by a flat annual (capitation) fee.

Certain quotations from the plan of the British Dental Association will be of interest to the profession in the United States:

(1) The foregoing considerations have an important bearing on the question as to whether the remuneration of dental practitioners who undertake treatment of insured persons should be on the basis of a scale of fees for various items of treatment, or be made on a per caput basis.

The Committee is of the opinion that the basis of an itemized scale of fees for treatment is not in the best interests of the insured person, since it is not conducive to treatment being visualized as a whole, thereby tending to restrict the dentist's professional judgment. Payment on a per caput basis and a panel system would not only leave the dentist free to exercise his professional judgment, but would put a premium upon careful diagnosis, and, more important even from the point of view of a health service, it would insure that maintenance of contact between patient and practitioner so necessary to secure true prevention and maintain dental fitness. Such an ideal the Committee believes is possible only by the adoption of a per caput and panel system of administration.

The adoption of such a system as that outlined above with maintenance of contact between patient and practitioner as the first essential, would foster the development of general dental practitioner or family dentist, a development the importance of which was stressed by the British Medical Association's proposals in the parallel case of the family doctor. The Committee considers that every insured person should be assured of the services of such a practitioner.

Some form of control is inseparable from a health service financed partly out of public funds, and the dental profession would not desire to be unreasonable in its demands for freedom in this respect, but the Committee is of the strongest possible opinion that the maintenance of confidence between patient and dentist, upon which the success of dental treatment depends to a far greater extent than is realized, would best be secured by limiting so far as possible the interposition of third parties.

(2) The Committee has examined public dental service from many angles. It would emphasize that, in order to secure a satisfactory standard of dental health for insured persons, the school dental service should be expanded so as to insure that all children who attain the leaving age are in a dentally fit condition.

(3) The scope of treatment to be provided under the scheme may be defined as "general dental treatment," and would include scaling, gum treatment, filling with plastics, root treatment, extractions with local and general anesthesia other than prolonged, the provision of such dentures as were found to be necessary for the maintenance of a reasonable standard of mastication and general appearance, together with the upkeep of dentures, *e.g.*, repairs, re-makes, etc. The provision of dentures would, it is considered, require to be governed by the following rules:

An insured person would be entitled to receive dentures under the scheme if either:

(a) his or her Masticatory Co-efficient calculated on the following scale was 40 or less:

8 incisors count as 1 equals.....	8
4 canines count as 2 equals.....	8
8 premolars count as three equals....	24
12 molars count as 5 equals.....	60

Total100

(b) he or she had less than ten teeth in functional occlusion;

(c) he or she suffered from digestive disorders caused by lack of sufficient masticatory powers even if Masticatory Co-efficient was above 40; or

(d) the nature of his or her occupation made it essential that teeth lost from the front of the mouth should be replaced by dentures. Musicians and singers may be quoted as examples.

(4) Gold fillings, porcelain and gold inlays, prolonged general anesthetics, radiographs, electro-therapeutic treatment, gold and metal dentures, crowns and bridges, obturators, splints and orthodontic apparatus, treatment of oral complications arising from general medical or surgical treatment, would not be included in the service. A dentist desiring to provide any of the excepted items of treatment for an insured person on his list would be required to obtain the prior permission of the Insurance Committee.

The Committee has experienced great difficulty in arriving at a suitable capitation fee, available statistics being meagre and inconclusive, but after a careful examination of the available data it is of the opinion that an adequate service can be provided at a capitation rate within the limits of 12s. 6d. and 16s. (approximately \$3 to \$4).

The Committee of the British Dental Association bases the above capitation fee on the assumption that services would be supplied to approximately 25 per cent of the insured population. It further recognizes the fact that because of the deplorable state of dental conditions in the country, the twenty-five per cent rate might not apply and the dentist would probably suffer a loss from his panel practice for two or three years. However, over a period of years, as patients became better risks and as school services expanded, there would develop a normal and continuous case load from which the dentist would derive a profit.

The following notes, approved by Dr. Senior, throw further light on conditions in England:

Dr. Senior discussed the interesting situation resulting from the practice of dentistry by the Co-operative stores. These stores, originally organized to purchase and sell food and general supplies on a co-operative basis, have extended their activities enormously. At present they provide such items as health, educational and library services.

Some time ago the stores opened a number of dental clinics. Under the dental law, this set-up was illegal, and the stores were prosecuted and fined. However, the practice of medicine or dentistry by a *specific Corporation for this purpose* is not illegal. After the prosecution, the co-operative stores organized a dental company, and now have some 33 dental clinics operating. Not only members, but anyone may go to these clinics and secure dentistry at insurance rates. The clinics have grown in number until the last year. While they damaged private practice, the quality of service rendered is good. Both the equipment and personnel are high grade.

There has been great improvement in the dental work for insured persons since the plan for regional dental officers was adopted by the Ministry of Health. By this system the approved societies have learned who are the black sheep in dentistry.

The Ministry of Health suggested to the Dental Benefit Council the opening of an experimental clinic. The objective was to determine the feasibility of providing dentistry to insured patients through clinics rather than private practice. The scheme, which was prepared by the Council, was shelved by the Ministry. (Senior stated, "If you have to develop a Clinic plan, be sure and include all of the costs.")

The Approved Societies attempt to maintain their additional cash benefits, and after that come the dental benefits. Senior would eliminate the approved society from Health Insurance, and provide the benefits directly under Government control.

The dentist's position is more difficult than that of the physician in health insurance. All dental work is on display for examination and approval. Hence the examinations are bound to improve the quality of service.

Since the development of Health Insurance, the doctor's life is more satisfactory. Relative to postgraduate training, the statement was made, "We haven't developed in England the postgraduate mind."

SOURCES OF INFORMATION

Two other items growing out of this investigation appear to be of major importance. One refers to the main source of information to the general profession in the United States on the subject of English Health insurance. The other relates to the digest of a speech by Sir Henry Brackenbury, which was presented, with comments, in the November, 1933, *Bulletin* of the American Medical Association.

The first item deals with the weekly letters of the London correspondent in the *Journal* of the A. M. A. In these letters are many comments, in the main of an adverse nature, concerning health insurance. Your commission believes that these comments convey an erroneous impression to their readers and that they do not present the opinions or views of the English profession. Preparation of the weekly letter has been placed in the hands of one who is not in regular practice; neither is he a member of the British Medical Association, nor is any record found of his having been at any time in the past thirty-three years.

Sir Henry Brackenbury prepared a written criticism of the aforementioned digest of his speech. After commenting on the failure of the article to convey the fact that he was addressing a group composed largely of insurance officials and other laymen, he states as follows:

"This distortion of atmosphere or setting is further emphasized by the omission from the report and comments of all reference to the earliest part of the address. This initial portion is of essential importance in at least two respects: (1) It places in the forefront, amongst other things, the officially expressed opinion of the medical profession in Great Britain that 'the measure of success which has attended the experiment of providing medical benefit under the National Health Insurance System has been sufficient to justify the profession in uniting to insure its continuance and improvement.' (2) It stresses the fact that the whole address was intended 'not to be dogmatic but interrogatory,' that the questions asked were genuine inquiries seeking to provoke thought and not propounded for the purpose of giving definite or fully considered answers.

"In fact, as can be seen by a careful perusal of the paper itself even as quoted in the 'Bulletin' and as was evident from these omitted portions, the discussion was concerned with the sociological and financial consequences of cash payments or 'doles' week by week, and not with the medical or health effects of the system of giving medical advice and treatment. This is all-important. Attention is drawn to the tendency of the former to produce certain undesirable effects; in so far as the latter is considered the indications are that it does not produce like effects, and is beneficial. The one conclusion which is asserted with some confidence is that the two things ought, as far as possible, to be separated from each other.

"The interpolated comments in the 'Bulletin' report are sententious and, I think, unfair and misleading, because they imply or assume that possible strictures with regard to 'sickness insurance for cash payments' apply also, and equally, to 'medical benefit.' This is not so, nor is there any justification for reading this into the address. Even in the report itself there is one instance in which the use of italics almost amounts to deliberate misrepresentation. In quoting alternative suggestions for dealing with certain positions, one alternative is italicized, whereas in the address I immediately go on to declare that it is the other (non-italicized) alternative which should be adopted. This is an unworthy trick."

Your commission presents the above two items with regret.

In presenting this report your commission wishes to record its opposition to the introduction into the United States of any system of health insurance now existing in any country in Europe. No system conforms at present with all the policies adopted by the Michigan House of Delegates in July, 1933. These policies are:

1. Free choice of physician by the insured.
2. Limitation of benefits to those of medical service.
3. The control of medical service benefits by the profession.
4. The exclusion of individuals or organizations that might engage in health insurance for profit.

At the same time your commission records its opinion that the defects of present systems have been imposed upon and are not inherent in the principle of health insurance. The impositions upon the principles take their origin very largely from

the failure of the professions to adopt a definite policy of constructive action early in the discussion of health insurance. When health insurance becomes an immediate rather than a remote problem professional prower is largely dissipated through internal antagonism or inertia arising out of a general lack of knowledge concerning the subject.

Such a condition only serves to nourish and strengthen any opposition to medical leadership. As far as the public is concerned, any failure of the profession to assume leadership is accepted as evidence of a lack of qualification. Unless emotionally aroused, the public would welcome leadership from the profession.

The first need in the development of constructive leadership is an informed profession, since no system of mechanical "checks and balances" can ever replace intelligent judgment of leadership-ability. The official channels through which information flows to the practicing physician are well known. It is unnecessary to say that these channels should be of unimpeachable integrity. If they fail of their function, if there is a selection of either protagonistic or antagonistic material, if there is any juggling of facts, the suffering and the loss of public esteem fall upon blameless shoulders: the rank and file of practicing physicians.

Appended is a brief description of the English system of health insurance.

Respectfully submitted,

(Signed) H. A. LUCE, M.D.

(Signed) N. SINAI, Director of
Research, Committee on
Medical Economics.

NATIONAL HEALTH INSURANCE IN ENGLAND

A description of the main features of national health insurance in England is quoted from the "Memorandum on the English Scheme of National Health Insurance, with Special Reference to its Medical Aspects," by G. F. McCleary, Deputy Senior Medical Officer of the Ministry of Health, published in 1930. Certain changes in the financial structure of health insurance have been made since 1930 and these are included in the following material:

Section I.—The General Framework of the Insurance Scheme

The English system of National Health Insurance was established by the National Insurance Act of 1911, which was described in the Preamble of the Act as "an Act to provide for insurance against loss of health and the prevention and cure of sickness and for purposes incidental thereto." The system has been modified by several subsequent Acts, the most important of which was the consolidating Act of 1924, but the modifications have for the most part dealt with matters of detail, the chief object being to simplify administration and adapt the scheme to the changed conditions due to the war. The main framework of the Scheme still stands.

An exception to this statement should, perhaps, be made in regard to Widows', Orphans' and Old Age Contributory Pensions Act, 1925, which increased the contributions paid by insured persons, and in return entitled them to old age pensions, and provided pensions for the widows and orphans of deceased insured persons. But this Act, though adding substantially to the advantages accruing to the insured population, did not modify, except in points of detail, the general scheme of administration.

The Insured Population.—National Health Insurance is compulsory upon all persons, male or female, of the ages of 16 and upwards, who are employed under a contract of service in manual labor. The insured population, therefore, includes practically all those who are spoken of as "wage-earners." Moreover, all persons employed under a contract of service in non-manual employment are required to be insured if their rate of remuneration does not exceed £250 a year. Persons to whom compulsory insurance applies are known as *employed contributors*.

The Insurance Scheme provides also for voluntary insurance. Any person except a married woman, who has been employed and insured for not less than 104 weeks, may, after ceasing to be an employed contributor, continue in insurance as a voluntary contributor. Such persons pay the whole weekly contribution themselves. Until recently few persons took advantage of this provision. The total number of insured persons in England and Wales in 1929 was

about 15,000,000, forming 37.8 per cent of the total population, and until the introduction of the Contributory Pensions scheme there were only about 30,000 voluntary contributors. The number has, however, increased materially in the past four years doubtless in consequence of the advantages offered by the Pensions Act of 1925, which apply to voluntary as well as to employed contributors, and in 1929 was about 276,000. A voluntary contributor whose total income exceeds £250 a year is not entitled to medical benefits.

Cost of Scheme.—The cost is borne partly by the insured persons, partly by their employers, and partly by the State. The insured persons and their employers pay their share in the form of weekly contributions, as shown in the following table:*

	MEN			WOMEN		
	For Health Insurance	For Pensions	Total	For Health Insurance	For Pensions	Total
Ordinary Rates						
Amounts payable by the employer	9c	9c	18c	9c	5c	14c
Amounts recoverable from wages of the employed persons..	9c	9c	18c	8c	4c	12c
Value of Weekly Stamp to be affixed by employer			36c			26c

Contributions are not required to be paid in respect of weeks during which an employed person is incapable of work by reason of sickness or disablement, but they may be paid for such weeks in so far as is necessary to make up the 104 contributions required to qualify for certain benefits or for pensions.

The share of the cost borne by the State takes the form of the payment of one-seventh in the case of men and one-fifth in the case of women of the total cost of benefits and of their administration by Approved Societies and Insurance Committees. The State also bears the cost incurred by the Government Departments concerned in the central administration of the scheme.

The contributions of insured persons and employers in the year 1929 amounted in the aggregate to \$116,524,500, and a sum of \$25,206,500 was derived from interest on accumulated funds. The benefits and the administration of the benefits by Approved Societies and Insurance Committees cost \$155,675,000 and \$19,397,500 respectively, and the total expenditure, including the cost of central administration, was \$179,832,500.

Method of Payment of Contributions.—The employer is responsible for the payment of his own and his employee's contributions. The money payment is made by the purchase by the employer at a post office, of special stamps, known as Health Insurance and Pensions Stamps, of the values required. A stamp of the appropriate value for each week of employment must be fixed on a card, the Contribution Card, which the insured person must submit to the employer, on request, for that purpose. The employer is entitled to recover the insured person's share of the cost of the stamp by making a deduction from his wages.

Benefits.—The benefits provided for insured persons are as follows:

- (1) **Medical Benefit, i.e.,** medical treatment, including the supply of medicine, and of such medical and surgical appliances as may be included in a list prescribed by the Minister of Health.
- (2) **Sickness Benefit, i.e.,** weekly cash payments during incapacity for work by reason of illness. The ordinary payments are \$3.75 a week for men, \$3.00 a week for married women, and \$2.50 a week for unmarried women, beginning on the fourth day of incapacity and continuing during a maximum period, for the same illness, of 26 weeks. An illness beginning within twelve months from recovery from any illness is for this purpose regarded as the same illness.
- (3) **Disablement Benefit, i.e.,** a continuance of weekly payments after the right to sickness benefit has lapsed. Disablement benefit is practically an extension of sickness benefit at a lower rate (50%). Unlike sickness benefit, it is not limited to 26 weeks or other period, but continues to be paid until the insured person becomes capable of work, or reaches the age of 65, at which an old age pension ordinarily becomes payable. Disablement benefit, being paid as long as the insured person is incapable of work, is practically the same thing as an invalidity pension; but it is paid only in respect of total incapacity, not partial incapacity.
- (4) **Maternity Benefit, i.e.,** payment of \$10 on the confinement of an insured woman or the wife of an insured man. If the woman is insured and married, and is an employed contributor, she receives an additional \$10.
- (5) **Additional Benefits.**—These may be provided by those Approved Societies that are found, on valuation, to

have sufficient funds at their disposal for the purpose. The benefits may take the form either of an increase in sickness, disablement or maternity benefits, or contributions towards the cost of certain forms of special treatment, *e.g.*, dental, ophthalmic, hospital or convalescent treatment.

ADMINISTRATION

The administration of the Scheme may be considered under two heads, local and central. What may be conveniently termed the "local" administration is undertaken by Approved Societies and Insurance Committees under the central supervision of the Minister of Health.

LOCAL ADMINISTRATION

Approved Societies.

These are self-governing associations of insured persons who unite voluntarily to form a Society for the purposes of national health insurance. When such an organization has been approved by the Minister it becomes an Approved Society. There are over 900 Approved Societies operating in England and Wales, and 28 of these have branches which are independent financial units, and have considerable administrative independence. There are about 6,000 branches. The Approved Societies administer sickness, disablement, and maternity benefits and such additional benefits as they may be in a position to provide. They are not organized on a territorial basis, although the membership of some of the smaller societies consists chiefly of persons who live in certain local areas. The number of members varies from less than 50 to 2,000,000. Some of the large societies have members in every part of the country, and their membership includes workers in an enormous number of occupations.

Insurance Committees.

There is an Insurance Committee for every county and county borough, the total for England and Wales being 146. Three-fifths of the members represent insured persons, and are elected by Approved Societies having members resident in the county or county borough; one-fifth are appointed by the Council of the county or county borough. Of the other members, two are medical practitioners appointed by the Local Medical Committee, one is a medical practitioner appointed by the county or county borough council, and the remaining members are appointed by the Minister of Health. Of the members appointed by the county or county borough council and the Minister respectively, two at least must be women in the case of larger committees, and the Minister's appointments must also include at least one medical practitioner. (This provision does not apply to committees having fewer than 25 members.) The number of members varies, but cannot be less than 20 or more than 40, and as will be seen above, the number of doctors on the committee cannot be less than three and may be more.

Insurance Committees administer medical benefit, and for this purpose they enter in agreements with local doctors for the medical treatment of the insured persons of their areas, and with chemists for the supply of medicine and medical and surgical appliances. They are under obligation to confer in certain circumstances with three other local committees, namely, the Local Medical Committee, the Panel Committee and the Pharmaceutical Committee.

Local Medical Committees.

In every county and county borough there is a committee of doctors constituted by the doctors of the area themselves and recognized by the Minister as representative, not merely of the insurance practitioners but of all the members of the medical profession in the area. This committee must be consulted by the Insurance Committee on all general questions affecting the administration of medical benefit.

Panel Committees.

In the early days of the scheme it became evident that it was necessary to provide a convenient method to enable Insurance Committees to obtain the views of the insurance practitioners of their area in regard to certain matters affecting the administration of medical benefit, and by the Insurance Act of 1913 it was provided that in every area a committee should be appointed by the insurance practitioners of the area for the purpose. This Committee is termed the "Panel Committee." All the members must be doctors and not less than three-fourths must be insurance practitioners. In many areas the Panel Committee has been recognized as the Local Medical Committee, and is then termed the Local Medical and Panel Committee. In other areas the Local Medical Committee and the Panel Committee are separate bodies.

Pharmaceutical Committees.

In every county and county borough there is a committee elected by the insurance pharmacists of the area, which must be consulted by the Insurance Committee on all general questions affecting the supply of medicine and appliances to insured persons. This is termed the Pharmaceutical Committee.

*In this description the following values have been assigned to the English currency: Pound, \$5.00; shilling, 25c; pence, 2c.

The National Health Insurance Scheme in England and Wales is under the general supervision of the Minister of Health, whose powers as regards Wales are exercised through the Welsh Board of Health. The Insurance Acts confer wide powers upon the Minister. He makes regulations, which have the force of law, on a great variety of insurance matters, e.g., the collection of contributions, the administration of benefits, the constitution of Insurance Committees, the conditions of service of insurance doctors and chemists, etc. The Minister is also the appeal authority in disputes between insured persons, doctors, chemists, Approved Societies and Insurance Committees, although his functions in this respect are largely delegated to independent tribunals appointed by him.

The officers of the Ministry include an Out-door Staff organized on a territorial basis, who secure the payment of contributions, and advise Approved Societies, Insurance Committees and insured persons on matters arising out of the administration of the Scheme. There is also a local staff of medical officers, the Regional Medical Staff, to which reference is made later.

Section II.—Medical Benefit.

After the foregoing brief sketch of the general framework of the National Health Insurance Scheme, more detailed consideration may be given to the administration of medical benefit, the subject with which this Memorandum is chiefly concerned.

The original Insurance Bill as laid before Parliament in 1911 provided that medical benefit should be administered by the Approved Societies; but the medical profession strongly opposed this provision, and contended for the establishment of local bodies, on which doctors should be represented, specially constituted to administer medical benefit. This was conceded by the Government, and the Bill was altered to provide for the constitution of Insurance Committees, which are charged with the duty of making the arrangements or bringing the doctor into relation with the scheme and for distributing the insured persons in each area among the doctors of the area. Insurance Committees also make the necessary arrangements with the chemists. Neither the insurance doctors nor insurance chemists have any direct administrative relation with the Approved Societies.

Participation in the Insurance Medical Service.

Insurance Committees have no power to select the doctors who participate in the Insurance Medical Service. Any registered medical practitioner (other than a practitioner whose name has been removed from a medical list by the Minister) has a right to require an Insurance Committee to place his name on their list of doctors who undertake to give medical attendance and treatment to insured persons on the terms of service for insurance practitioners offered by the Committee and approved by the Minister. The statutory right of any qualified doctor to participate in the Insurance Medical Service was one of the principles for which the medical profession strenuously contended during the passage of the Insurance Bill through Parliament in 1911.

The profession also pressed for the right of the insured persons to choose their doctor, and this was conceded. An insured person is entitled to select any doctor from among those included in the Medical List of the area in which he resides, subject to the doctor's consent, and he can at any time change his doctor, if the doctor consents, or without such consent if he gives a fortnight's notice to the Insurance Committee. A doctor may also obtain the removal from his list of an insured person for whose treatment he no longer wishes to be responsible, but this is subject to certain restrictions. The procedure by which an insurance practitioner becomes responsible for the treatment of an insured person is as follows:

Method of Obtaining Medical Attendance.—Approved Societies supply particulars of all their members to the Minister, who transmits the information to the respective Insurance Committees in whose areas the members reside. The Committee then gives each insured person a Medical Card which tells him how to obtain the services of an insurance practitioner. In all the Post Offices there is a list of practitioners, to which insured persons can refer. Having selected a practitioner, after reference to this list or otherwise, the insured person presents his medical card to the practitioner of his choice, who, if he accepts him, signs the card and sends it to the Insurance Committee. The Committee then adds the insured person's name to the practitioner's list, returns the Medical Card to the insured person, and sends the practitioner another card—the Record Card—which serves the double purpose of forming part of the practitioner's card index of the insured persons for whose treatment he is responsible, and a record on which he enters particulars of his attendances on his patients and the illnesses for which he has treated them.

A practitioner is not obliged to accept a person who

applies for inclusion in his list, but if he refuses he must give the applicant the name and address of another practitioner to whom application might be made, and he must give the applicant such treatment as he may require until a practitioner has accepted him. He must also notify the Insurance Committee that he has refused to accept the applicant. If a person fails to secure voluntary acceptance by a practitioner he may apply to the Insurance Committee, who refers his case to a Sub-committee (the "Allocation Sub-committee"), consisting of three members appointed by the Insurance Committee, and three appointed by the Panel Committee, which is empowered to assign him to a practitioner selected by them.*

An insured person, temporarily absent from home, may obtain medical attendance by presenting his medical card to an insurance practitioner in his area of temporary residence. Provision is made for the discharge of the duties of practitioners by deputies when they are unable to attend their patients themselves, and if neither the practitioner responsible for an insured person's treatment, nor his deputy, is able to attend the person and give him any treatment immediately required owing to an accident or other sudden emergency, it is the duty of an insurance practitioner who may be summoned and can attend to give such treatment as may be necessary. The insurance practitioners of an area accept a collective responsibility for the treatment of all insured persons in the area.

A practitioner, working alone, may not accept more than 2,500 insured persons, but if he employs a permanent assistant he may accept such an additional number, not exceeding 1,500, as the Insurance Committee may approve. A permanent assistant cannot, however, be employed for the treatment of insured persons without the sanction of the Committee, and for the employment of two permanent assistants the sanction of the Minister as well as the Committee is necessary.

The number of insurance practitioners in England and Wales, in 1929, was about 15,370, and the average number of persons on a practitioner's list was about 930.† (For each insured person on his list the insurance practitioner receives approximately \$2.00 per annum.)

The Speaker: Does the assembly wish to proceed to a vote on the resolution before lunch?

On motion regularly made and supported, it was voted to recess for lunch at one-five o'clock.

HOUSE OF DELEGATES

Thursday Afternoon, April 12, 1934

The recessed meeting reconvened at one-forty and was called to order by the Speaker.

The Speaker: Before further discussion is indulged in, I will ask Dr. Sinai to answer questions which have already been asked.

Dr. L. J. Gariépy (Wayne): Before Dr. Sinai answers those questions, I would like to ask a couple more. One is: What is the committee's recommendation on the salary limit of these people to be included?

Dr. S. E. Gould (Wayne): I would like to ask one or two questions of Dr. Sinai. How was the figure of \$8.50 arrived at?

The Speaker: You may have opportunity to ask questions later on. The Chairman will not let anyone go home from this meeting dissatisfied that he did not have a chance to express his opinion.

Dr. N. Sinai: Mr. Speaker and Members of the House: Dr. Insley asked certain questions or made certain statements with respect, first, to the matter of voluntary purchase, and stated that the history of voluntary insurance is a history of no insurance;

*The procedure described in the two preceding paragraphs is that of the system in which the doctors are remunerated on a capitation basis, e.g., in proportion to the number of insured persons on their lists, the system that is now in operation all over the country. Before 1927, however, there were two areas, Manchester and Salford, in which the doctors were paid by the distribution among them of a fixed sum in proportion to the number of attendances made by each. But the Salford doctors changed to the capitation system at the beginning of 1927, and the Manchester doctors from the beginning of 1928.

†An insured person, with the consent of the Insurance Committee, may make his own arrangements for obtaining medical treatment, receiving from the Committee a contribution towards the cost of the treatment. Such persons in 1929 numbered about 25,000.

that the people of their own volition will not purchase insurance. No one can disagree with that statement.

One of the shining examples of voluntary insurance that does work is that of Denmark, and when you make an analysis of the Danish situation you find it isn't voluntary insurance at all. While it is voluntary as far as the law is concerned, the industrialists themselves make it compulsory for the people who work. So the question of compulsion may be answered as to state compulsion. It also may be applied by a particular industry.

In the proposed experiment, if an industry in some county in Michigan is interested enough to experiment with the medical profession, undoubtedly that industry would make the service compulsory for the employees engaged. In that way you get away from the question of volition. The fact is, I would be very fearful of leaving it on a purely voluntary basis to the members in that industry, because of what would result. A few people in the industry who know that they need surgery, whose wives are going to have babies, who know they are going to have specific medical services within the next two weeks or the next month, would sign up, and just as soon as the service was secured they would sign off.

So it is that in every system whether it is old age pension, unemployment insurance, private unemployment insurance in the industry, 75 per cent of the workers must sign or the system won't start. Otherwise, we will get a very dangerous selection in our group of population.

Then comes the question of \$3,750,000,000 being applied to our taxes. I am not quite clear concerning the contention that it would be applied to taxation, because if there is anything in which the committee has been interested it has been in keeping MUTUAL HEALTH SERVICE out of taxation, out of public funds, because immediately you get public funds mixed up in the cost you get some form of public direction and that usually means some form of political direction. This is a program that the committee has presented as one in which the professions will take complete direction and in which the public, as far as industry and the recipients of service are concerned, will have representation, because the public is putting up the funds and is entitled to that representation.

As far as this three billion and more being placed on taxation, no one has ever contended that the Workmen's Compensation costs should be placed on taxation. They are costs that are taken from another source entirely, a source other than taxation.

The question came up in conversation as to why not set aside a certain amount for groceries and a certain amount for shoes. All of these programs, be they unemployment, old age pensions, widows' pensions, and so on, are based upon the need for protection against a contingency that is unpredictable, something that may arise in the future life of the individual which he cannot predict and for which something must be done, some preparation must be made. Anyone is able to predict the need for clothing and for food and for shoes and for housing, protection from the elements, and so on.

The question came from Dr. Garber concerning what will be the income of the general practitioner. On the basis of a possible 1,000 in this low income group, which will be included, his total income would be somewhere between \$5,000 and \$5,500. That is for the general practitioner alone. Added to the physician's income will be another \$3 for the services of the specialists. We know there are many general practitioners who, through training and experience, are able to provide special services.

In that case, the committee has come to the conclusion that there is no reason why the general practitioner who, through his experience and his education and training, can give the service, should not provide that service for his 1,000 patients; or, better yet, why he should not provide that service on reference from his brother practitioners, his colleagues. The limitation on the general practitioner is very largely a limitation on his ability to provide that service. The only thing that limits his income is his ability to provide, in addition to the ordinary services, the services that would be called those of a specialist.

On the question, "What will you ask the employer?" I don't know. If this plan is presented to certain selected employers, from there on it will depend upon the reaction of the employers and the conferences of the employers with members of the Committee on Medical Economics. This plan, if you approve it, will be presented to the employer with a request for his judgment and the possibility of this plan going into operation in a selected industry in a selected area. No one can make any statement as to what kind of a sales talk is necessary, or what else may follow. That is one of the reasons the committee was most interested in publicizing this report because, if the reception of the public, the reception of the newspapers and the editorial comment is favorable, the committee feels that pressure of public opinion and editorial comment will be very effective in its discussions with individual employers who are just as receptive to that type of comment as you, or as any other individual or any other group.

The question has come up as to whether this \$27.88 is going to be a payment by the family per person. If the family has ten individuals, that would amount to \$278.80 for the particular family engaged in the industry that may try the program. It would be unreasonable for that family to pay to the extent of \$278.00 because there are ten individuals.

I am not entering into the question of whether there ought to be ten, or whether there ought to be two, or any other question of that character, but, as far as the physician is concerned, if on his family list there are in one family ten individuals, that ten would be multiplied by the \$8.50 for all the physician's services, and the medical man would receive \$80.50 for the individual family of ten people.

As far as industry is concerned, however, my own feeling is that the industrialist is just as interested in eliminating records and record keeping and red tape as you are. It seems to me one of the logical ways might be for industry to take an average of all the families employed in the industry, and if that average is four, collect on the basis of the average family, and then pay the physician on the basis of the number of people. There may be families of one, families of two, and families of ten. The physician will receive on a per person basis, and the individual will pay on an average per family basis.

That must be done in order to prevent industry from firing all of the people who have families of five, six or seven and employing single men, especially if industry decides it is going to pay some of the cost for the income group under \$1,200.

The committee is not in possession of any facts concerning what will be the reaction of industry. If you approve, then the committee concludes that the next step is to begin the discussion with industrialists who are interested, who have evidenced a general interest in the problem of the welfare of the people they employ.

The Speaker: Is there any further discussion or questions? Every man must go home from here satisfied that he has had a proper opportunity and plenty of opportunity to express himself.

Dr. Karl Brucker (Ingham): I would like to ask the same question with reference to the position of the specialist in this picture. It seems to me that the inducement for men to specialize, and all, should not be removed. He has no family list, so what would his income be?

Dr. N. Sinai: His income would be what he makes it. It would be on the basis of the number of cases referred to him. If he is practicing a specialty, it would be on exactly the same basis as it is today. The general practitioners who do have family lists would refer to the specialist for that service, members of the family list.

One of the steps that the Committee would undertake, of necessity, is the development of a fee schedule for the various specialties, the determination of what are the specialty services and the development of a fee schedule for the specialists engaged in a particular field; which would be applicable, whether it is \$1,200, \$1,500, \$2,000 or \$2,500 (whatever is the decision of this body), and the specialist would be paid on the basis of that fee schedule.

I think, from the figures that are available, we have set aside enough money, within reasonable estimates and limits, to take care of reasonable fee schedules for all the specialists' services that may be demanded or required.

The specialist, in the scheme of things, is not changed at all. He receives his patients through reference. The only change is that he works on a regular fee schedule through MUTUAL HEALTH SERVICE.

Dr. Karl Brucker (Ingham): Wouldn't there be a disposition, or would there, on the part of a general practitioner to refer a case that came within some special line rather than to keep the case himself and do this work himself, such as the removal of tonsils, for which we may get no additional pay?

Dr. Sinai: He might, if he happens to be qualified according to his own professional group. He would receive pay as a general practitioner, because in traveling over the country and talking with and meeting physicians and looking over their records, we know a great many general practitioners in communities who provide surgical service for a good many of their colleagues in those communities. There is no justification in lopping off from the general practitioner that service for which he is perfectly qualified by training and experience to give.

Dr. F. T. Andrews (Kalamazoo): Inasmuch as the success of this program depends largely upon the interest which is aroused in the community where it is attempted to be put across, I did not realize when you were reading the amendments whether the local committee or the local health organization was to have the opportunity of selecting the area in which this should be placed, or whether it was to be selected by the Committee. If it is true that this area is to be selected by the Committee, I would like to offer the following amendment: It is moved that the areas in which the program is to be instituted shall be requested by the local county medical society.

The Secretary: That is already here.

The Speaker: The Secretary will kindly read that part of the original or main motion.

The Secretary: "That the plan for MUTUAL HEALTH SERVICE shall not be inaugurated in any county without the approval of the county and the State Medical Society."

Dr. F. T. Andrews: Thank you. I apologize to the House.

Dr. L. O. Geib: I would like to ask, in reading a portion of the resolution again, does that resolution specifically say we approve the principle of MUTUAL HEALTH SERVICE?

The Speaker: The Secretary will read that portion.

The Secretary: "BE IT RESOLVED, That the House of Delegates of the Michigan State Medical Society approves general principles of the plan for MUTUAL HEALTH SERVICE."

Dr. L. O. Geib (Wayne): Mr. Chairman, I think we are involved there in quite a large affair. I feel that the people back home should have something to say about this, and therefore, I offer the following amendment: Before this principle of health insurance be endorsed, that it be taken back to our local societies for approval or disapproval.

I think it is too large a question for us to decide. I think the people in our local societies may be in favor of it. Their reaction at first may be very much against it, and I think they are going to demand a great deal of education before they will approve this thing. I think we can make time by sending this thing back to our local societies.

Dr. C. S. Ratiqan (Wayne): I second that amendment.

Dr. B. L. Connolly (Wayne): Wouldn't it be sufficient to add to that resolution, "as an experimental proposition"—approve it as an experimental proposition? I mean the wording right there at that point.

Dr. E. D. Spalding (Wayne): This is a group of delegates that have come to a special meeting called for a special, specific purpose which has been perfectly well known before we came here by the societies that sent us here. We are a House of Delegates who have come together to receive the report on this Special Committee on Medical Economics, of its study and its preparation of a plan as outlined here. The people who sent us here knew perfectly well what we were coming for, and they had ample opportunity to send us instructions if they so wished. If there is any sense of representative government in this country, it certainly isn't necessary to go back and ask if we have permission to vote of the people who sent us here.

Dr. L. J. Gariepy (Wayne): I want to repeat the question that I asked before. I would like to ask Dr. Marshall just what is the wage limit?

The Speaker: Dr. Gariepy, I will have to insist on your speaking to the amendment at this time.

Dr. Karl Brucker (Ingham): My understanding of the way we were sent here differs somewhat from the doctor from Wayne. This was delivered to me with instructions on it to keep quiet about it and say nothing. My county society doesn't know anything about this. The men back home know nothing about it. I was instructed to come here to a secret meeting.

Dr. D. P. Foster (Wayne): If my memory does not fail me, I believe we already have spread on the minutes of our last meeting, approval of this particular principle.

The Speaker: Are you ready for the question?

The question was called for.

The Speaker: The question is on the adoption of the amendment. Dr. Geib, will you repeat the amendment?

Dr. L. O. Geib (Wayne): Before this principle of health insurance be endorsed, that it be taken back to our local societies for approval or disapproval.

Dr. S. E. Gould (Wayne): Very frankly, I don't believe in our discussing this question if we are going to take it back home and ask them what they want us to do. We are here to do this, to study this. Personally, I feel like a school boy coming here.

The Speaker: Those in favor of the amendment say "aye;" opposed, "no." The amendment is lost.

The original motion is now before the House. Those in favor of the original motion made with the resolution say "aye;" opposed, "no." The resolution is carried.

The Secretary: It is the resolution introduced by Dr. Biddle.

Dr. L. J. Gariepy (Wayne): I would like to have that question answered for us all to know where we stand, what we are voting on, and just where this wage limit is. We are voting on something we don't know anything about.

The Speaker: You may call for a roll call vote, but you cannot open that discussion again.

Dr. E. C. Baumgarten (Wayne): I think Dr. Gariepy is right. I think your vote was a little premature, if you will pardon me calling it that. There is still a blank space on this so-called plan up here which calls for a set amount up to which these families are to be included or excluded which hasn't been decided. Before we can make an intelligent vote on this thing, that amount certainly has to be settled.

Dr. L. J. Gariepy (Wayne): I asked for the Committee's opinion as to what the right amount should be. That is what I asked for.

The Speaker: The Committee has vouchsafed no opinion. It is for the men assembled here to set that limit. That is your prerogative.

Dr. L. J. Gariepy (Wayne): The Committee must have an opinion as to what they think is right.

Dr. E. C. Baumgarten (Wayne): I didn't vote at all on the thing. I don't see how we can vote intelligently on this thing unless we know what this amount is going to be. My "yes" or "no" will depend largely on that, whether I approve this thing or whether I don't. If you set it up to \$2,000, I am going to vote "no."

The Speaker: This hunch can get you out of the spot. You can vote for a reconsideration of this question that was just passed.

Dr. C. S. Ratiqan (Wayne): It can't be passed until the roll call is attached.

Dr. E. D. Spalding (Wayne): May I ask for reconsideration?

Dr. Cook: I have not the power of vote, but I have the power of discussion, however. I would like to state that I don't know how I would vote on this if I did. But I don't like the way in which the Speaker offered this resolution. I am quite sure the Speaker had no intention of cutting off the discussion in the manner in which it was cut off, but I feel, in a matter of such serious import to the profession and this House of Delegates, every man should be given ample opportunity for proper discussion. I don't believe this House feels it was quite the right time to have presented that resolution for vote. I realize that according to parliamentary rule they voted and there has been a decision, and the only thing to do is to have a roll call. Still, it takes two-thirds to reconsider a resolution, and I don't think it is quite fair, at this time, to require a two-thirds vote of this House to reconsider the resolution and open it up for further discussion. I don't believe this House, as I sense it, was quite ready to vote.

The Speaker: The Speaker agrees with Dr. Cook, and had no intention of precipitating a vote on this, and will entertain a motion for the reconsideration of that vote.

Dr. A. P. Biddle (Wayne): I would say, as a matter of parliamentary law, you can't reconsider until your vote is passed. Then the man who moves for reconsideration must have voted in the affirmative.

The Speaker: The Chair ruled that the motion was carried. From that point, and without wasting time for a vote, I will entertain a motion for reconsideration.

Dr. E. D. Spalding (Wayne): I move for reconsideration of the oral vote.

The motion was regularly supported.

The Speaker: Moved and supported for reconsideration of the oral vote. Those in favor say "aye;" those opposed say "no." Reconsideration is carried, and we will proceed with a reconsideration of the motion.

Dr. C. S. Ratigan (Wayne): I feel as Dr. Garipey, that the whole question hinges upon the question that that be experimental. The people we are earning our livelihood from today are the ones in the \$2,000 group. If those are going to be cut from under us, there won't be very much left. The clinics have a good deal of the rest of them. I think, before this body can intelligently vote on the question, that should be put in either by the House of Delegates or by the Committee.

Dr. W. H. Marshall: Inasmuch as the question has been directly put to me as to the upper limit, I may say that the Committee did not agree. There were many of us who felt that \$1,500 was the proper upper limit. On account of not being unanimous, we decided to leave it open for the House of Delegates to fill in and refer it back to you. That is all I know about it, Dr. Garipey.

Dr. L. J. Garipey (Wayne): I move that the upper limit be placed at \$1,200 per year for entrance into this.

Dr. C. F. Moll (Genesee): I will second Dr. Garipey's motion.

The Speaker: It has been moved and supported that the upper limit be placed at \$1,200. Is there any discussion?

Dr. R. H. Baker (Oakland): I think \$1,200 is too low. I consider in my own community the large number of school teachers and employed workers in offices who are earning over \$1,200, but who are not earning \$2,000. I think that group is entitled to be given service under a plan such as this. I have a good many school teacher friends. A few of them are patients, and I have discussed this thing with them a great deal. They are planning and have made a considerable effort in Pontiac to develop an insurance plan, because they were up against the same proposition we are trying to cure. We have to place the limit to \$2,000 to include that group.

Dr. S. W. Insley (Wayne): I would like to ask whether or not the final figure to be arrived at will not be influenced partly by interviews with the employers, and whether or not that final figure might not be modified by interviews with employees. After all, I might add, they are going to pay the freight.

If we are simply asking that this thing be put over for further study, I wonder why this question necessarily has to be decided at this particular moment. I understand the plan will not be put into effect until at least the next meeting, and if we are still going to study it for another six months, why not leave that figure open?

Dr. G. Harry Ferguson (Saginaw): Inasmuch as it is an experiment, why wouldn't it be a good idea for this body to accept this as an experiment in the experimental stage, and then figure the fine points after you come to your experimental stage or as you go through your experimental stage? As I understand it, all this Committee wants is to try this experiment.

Dr. C. S. Gorsline (Calhoun): Agreeing with the previous speaker in regard to this being an experiment, I feel that the Committee will be vastly more able to arrive at an equitable limit than the House of Delegates could by discussion. Would it be tenable to recommend to the Committee that it is the sense of this House of Delegates, pending their investigation, to have a figure of not less than \$1,200 nor more than \$2,000, at the discretion of the Committee, for the starting of the experimental work?

Dr. C. F. Moll (Genesee): There is a motion before the House.

The Speaker: Are you ready for the question?

Dr. E. C. Baumgarten (Wayne): Is there anything in your experience in Europe that would help you to guide us? What are the limitations they have set there, or did their limitations include also the cash benefits? Can those things be separated?

The Speaker: Relative to the costs in Europe, there would be no advantage in determining what our set-up should be.

Dr. E. C. Baumgarten (Wayne): They have certain limits also, a certain number of pounds per year.

The Speaker: They also have included with their service, cash benefits.

Dr. N. Sinai: It is just a matter of what the British system does. They set their limit, with their wage scales and their cost of living, at 250 pounds, approximately \$1,250, as the limit of income for the group which is insured under the compulsory system.

Dr. E. D. Spalding (Wayne): Before or after the devaluation of the dollar?

Dr. N. Sinai: It has never changed. Two hundred fifty pounds has been the limit.

Dr. H. W. Peirce (Wayne): Usually, when we experiment in medicine, we take guinea pigs or we take our clinic patients. We don't experiment on our regular full-pay patients. I should like to have talked on other points of this plan, but there doesn't seem to be time.

However, I do feel if we are going to have an experiment we shouldn't take the better patients of the great bulk of the general practitioners in a city like Detroit and use them for experiment. Therefore, I am very much in favor of the \$1,200 limit.

Dr. W. D. Barrett (Wayne): I don't think this is an

experiment on patients. This is an experiment of a system.

Dr. F. T. Andrews (Kalamazoo): There are a good many families, as we all know, who only have their wives and themselves, and who at \$1,200 are able to pay their bills. The individual who has ten children and earns \$1,000 or \$1,800 can't pay his bills. Why set an arbitrary figure? I feel a sliding scale should be justified in this case, and the discretion of the Committee be entertained in making this experiment.

Dr. C. F. Brunk (Wayne): I feel, very keenly, that we will plunge to defeat in the purpose of our plan if we try our experiment with the limitation of our patients to a very low salaried class. We are trying an experiment, and we can't engage any sympathy from the employers if we put it in a class that won't represent most of the people employed. I feel we must necessarily not put a limit on it so that we will have our experiment worth while. If we are going to expend some money on it and are going to try it at all, let's try it properly.

Dr. A. E. Stickley (Ottawa): In order to expedite matters, I will make a substitute motion that the Committee be instructed to use \$2,000 as an upper limit. It seems to me if we are going to figure on just limiting to \$1,200 or anything else, if we give them the upper limit they can be the judge. We certainly can't judge these things. They have studied this question. Anyway, it will come up before our next annual meeting for complete ratification. It seems to me we will have a lot of time if we will do that.

Dr. L. G. Christian (Ingham): While the Committee was not unanimous, four of the Committee agreed it should be set at \$1,500. Again last night I wanted the Committee to go there. I feel that \$1,500 as an upper limit would be equitable. Most of my patients making over \$1,500 pay me very nicely. At least four of the members have set \$1,500.

Dr. W. Joe Smith (Wexford): I support the substitute motion of \$2,000 as the upper limit.

The Speaker: The substitute motion is to make \$2,000 the limit. Is there any discussion on the substitute motion?

The Secretary: Mr. Speaker, the President of the Michigan State Medical Society.

The audience arose and applauded as President Le Fevre entered the room.

Dr. A. V. Wenger (Kent): I offer an amendment to the substitute motion that the upper limit be set at \$1,500.

The amendment to the substitute motion was regularly supported.

The Speaker: The motion now is the changing of the \$2,000 to \$1,500.

Dr. L. J. Garipey (Wayne): If the gentleman who supported my motion sees fit, I wish to withdraw the \$1,200 and place the \$1,500 as the Committee has already determined. I am in favor of the \$1,500 motion instead of \$1,200.

Dr. C. F. Moll (Genesee): I am very glad to withdraw my second to Dr. Garipey's motion, making it \$1,500.

The Speaker: That action will be unnecessary on account of consideration of the substitute motion which now stands with an amendment to make that at \$1,500.

You are about to vote on the substitution of the figure of \$1,500 in place of \$2,000 in the amendment which was to place the limit at \$2,000. You have substituted \$1,500 in place of the \$2,000.

The question was called for.

The Speaker: Those in favor say "aye;" those opposed say "no." Carried.

The substitute motion on the question now is that the Committee be empowered to act using \$1,500 as the upper limit for the income group. Those in favor say "aye."

Dr. C. F. Brunk (Wayne): What are we voting for? Are we voting to allow this experiment?

The Speaker: Not yet, Doctor. We are voting under a discussion that arose as to whether we were going to approve the planned experimental trial. The organization wished to know something about what that limit was going to be before they voted either for or against the approval of the principles of the plan.

Dr. Brunk: We are not voting for the plan?

The Speaker: We are not voting for the plan. You are only voting on the substitute motion, which was that the Committee be instructed and required to place the upper limit of income to \$1,500.

Dr. Brunk: I think I understand that. I would like to have some information when we are voting on the resolution.

The Speaker: Those in favor say "aye;" opposed "no." Carried.

Now you are about to vote on the resolution. Is there any further discussion?

Dr. W. C. Ellet (Berrien): I am sorry to ask the same question that I asked this morning. I didn't get the information I sought. That is, if this resolution of Dr. Biddle's is accepted, does it authorize the Committee to go ahead after today and put this into effect, or experiment with it, and then report back; or does it mean that they have to wait until the September meeting before this can be put into effect?

The Speaker: Dr. Sinai, or Dr. Marshall, will you answer that?

Dr. N. Sinai: It is in the resolution as read.

The Speaker: The Secretary will read the resolution.

The Secretary: A portion of the resolution: "That the House of Delegates of the Michigan State Medical Society approves general principles of the plan for MUTUAL HEALTH

SERVICE and directs the Committee on Medical Economics to undertake the following efforts:

- The discussion of the plan with employers and employees.
- The determination of the legal status of MUTUAL HEALTH SERVICE and the necessary legal actions for the organization of MUTUAL HEALTH SERVICE.
- The preparation of the final detailed plan for MUTUAL HEALTH SERVICE and its presentation to the House of Delegates for final action. . . .

The question was called for.

The Speaker: Are you now ready?

Dr. F. J. O'Connell (Alpena): I would like to ask if this matter of the insurance is going to be publicized to the general press before contact is made with the industrialists, employers and employees.

The Speaker: If I may be allowed to speak, that will be taken up at a later point, and the House will then decide what disposition they wish to make of the matter.

Are you ready for the question?

Dr. L. J. Gariepy (Wayne): Before we vote, I would like to know whether the Committee intends to use high pressure salesmanship in selling this plan to the employers, employees and the medical fraternity, or whether it is just going to be laid to them and get their reaction.

Dr. W. H. Marshall: Gentlemen, I should like to state that this Committee has never tried high pressure salesmanship on anything we have attempted to do. We have attempted to sell nothing. We have gone out to do as you told us to do, to get the facts. No member of my Committee has yet tried to sell anything; neither do we intend to.

Dr. F. W. Garber, Sr. (Muskegon): I want to ask a question in regard to the salesmanship of this plan. If that is going to reside in the practitioners themselves, will they have to go out and obtain this, or will there be permission to commercialize the profession in that sort of way? Will there be a struggle on the part of men taking this plan up to get as many families as they can, or how will that be handled? If handled in the way I have just suggested, will that not make a great commercial struggle as between the members of a society or community?

The Speaker: The Chair will ask Dr. Baker of Pontiac to answer that. He hasn't said anything today.

Dr. F. A. Baker: I don't think it will be necessary for any competitive action on the part of doctors to follow, inasmuch as the thing will necessarily be controlled by your own medical organization. Your county medical society will be your court, and your county medical society will undoubtedly lick the thing. It has been my experience that when medical men handle their own affairs they stoop over backward to see that it is done properly, and I think that might answer your question.

The Speaker: Are there any further questions?

The question was called for.

The Speaker: You are voting on the adoption of the resolution.

Dr. C. S. Ratigan (Wayne): I think on as important a matter as this it should be by roll call, and I ask for that vote.

The Speaker: Roll call has been asked for.

Dr. C. S. Ratigan: Or a rising vote.

The Speaker: Did you wish to change that to a rising vote, or roll call?

Dr. Ratigan: It doesn't matter to me, particularly, but I do think on an important question of this type just a mere affirmative vote of "yes" and "no," depending on how loud the Yes's can yell, would be a hard vote to judge. It doesn't matter much whether it is a roll call or a standing vote.

The Speaker: It is within the power of the assembly to decide.

Dr. Ratigan: I would like to hear some other suggestions, but I would like to see it either a roll call or a standing vote.

Dr. E. C. Baumgarten (Wayne): I don't think a roll call would be a bad thing. Some of our friends back home might want to know how we voted, and I am perfectly willing to let them know how I voted. Let's have a roll call.

The Speaker: We will proceed to a roll call.

The Secretary: Those favoring the adoption of the resolution will answer, "yes," and those opposed will say, "no."

The Secretary called the roll, with the result of the votes as listed below:

Alpena County		
F. J. O'Connell	Yes	
Barry County		
M. R. Kinde		No answer
Bay-Arenac-Iosco		
L. F. Foster	Yes	
Berrien		
W. C. Ellet		No
Branch (No delegate present)		
Calhoun		
C. S. Gorsline	Yes	
A. T. Hafford	Yes	
Cass		
W. C. McCutcheon		No
Chippewa-Mackinac		
(No delegate present)		

Clinton		
G. H. Frace	Yes	
Delta		
John W. Towey (Absent)		
Dickinson-Iron		
(No delegate present)		
Eaton		
A. G. Sheets	Yes	
Genesee		
Frank Reeder	Yes	
George Curry (Absent)		
C. F. Moll	Yes	
Gogebic		
Michael A. Gertz (Absent)		
Grand Traverse-Leelanau		
E. B. Minor	Yes	
Gratiot-Isabella-Clare		
T. J. Carney	Yes	
Hillsdale		
A. E. Martindale (Absent)		
Houghton		
Wm. T. King (Absent)		
Huron-Sanilac		
W. D. Holdship	Yes	
D. D. McNaughton	Yes	
Ingham		
L. G. Christian	Yes	
Karl Brucker	Yes	
Ionia-Montcalm		
W. W. Norris	Yes	
Jackson		
Phillip Riley	Yes	
James O'Meara	Yes	
Kalamazoo		
F. T. Andrews	Yes	
L. V. Rogers (Absent)		
R. G. Cook	Yes	
Charles Ten Houten	Yes	
Kent		
A. V. Wenger	Yes	
G. H. Southwick	Yes	
J. D. Brook	Yes	
Carl F. Snapp	Yes	
Leon E. Sevey	Yes	
Lapeer		
H. M. Best	Yes	
Livingston		
Henry Huntington	Yes	
Luce		
H. E. Perry	Yes	
Macomb		
J. N. Scher	Yes	
Manistee		
A. A. McKay	Yes	
Marquette-Alger		
V. Vandeventer	Yes	
Mason		
L. W. Switzer	Yes	
Mecosta		
G. H. Yeo	Yes	
Menominee		
(No delegate present)		
Midland		
Charles L. MacCallum (Absent)		
Monroe		
P. D. Amadon	Yes	
Muskegon		
F. W. Garber, Sr.		"On the understanding that this matter is to be referred to the next House of Delegates, I vote 'Yes.'"
Northern Michigan		
Fred Mayne	Yes	
G. H. Wood (Absent)		
Oakland		
C. T. Ekelund	Yes	
R. H. Baker	Yes	
Oceana		
Otsego-Montmorency, Crawford-Oscoda-Roscommon-Ogemaw		
Claude R. Keyport	Yes	
Ontonagon		
E. J. Evans	Yes	
Ottawa		
A. E. Stickley	Yes	
Saginaw		
R. M. Kempton	Yes	
G. Harry Ferguson	Yes	
Shiawassee		
I. W. Greene	Yes	
St. Clair		
A. L. Callery		No
St. Joseph		
R. A. Springer (Absent)		
Tri-County		
W. J. Smith	Yes	
Tuscola		
Dr. Maurer (Absent)		
Washtenaw		
John Sundwall	Yes	
John A. Wessinger	Yes	

Wayne		
H. W. Yates	Yes	
W. D. Barrett	Yes	
A. W. Blain (Absent)		
E. C. Baumgarten	Yes	
A. P. Biddle	Yes	
G. C. Penberthy	Yes	
B. L. Connelly	Yes	
E. D. Spalding	Yes	
J. L. Chester		No
L. J. Garipey		No
W. R. Clinton	Yes	
C. F. Brunk		No
L. T. Henderson	Yes	
C. K. Hasley	Yes	
B. U. Estabrook	Yes	
S. W. Insley	Yes	
L. O. Geib		No
D. P. Foster	Yes	
H. W. Pierce		No
V. L. Van Duzen	Yes	
C. S. Ratigan		No
S. E. Gould	Yes	

The Secretary: Has any delegate been overlooked?

Mr. Speaker, according to the parliamentary rules of order on a roll call, before the ballot is announced the Secretary should reread the roll in order that each delegate who voted may know whether he has been properly recorded. Your Secretary will so read.

The Secretary reread the roll call and his record of the votes cast, which was correct as read.

The Secretary: Mr. Speaker, the vote is 61 "Yes" and 9 "No."

The Speaker: The resolution is adopted by a vote of 61 to 9.

Does this assembly wish to give any instructions to its A. M. A. delegates?

INSTRUCTIONS TO A. M. A. DELEGATES

Dr. E. D. Spalding (Wayne): I would like to present a resolution at this time with reference to the very remarkable report of the doctors who went to England. I think if this had not been interjected into the discussion today there would have been an entirely different roll call. In discussing this matter during lunch, I remarked that I came here to scoff and remained to pray. I certainly would have voted "No" if I hadn't heard this remarkable report from England, because I had my own views on the matter.

The resolution I am proposing is this:

"WHEREAS, The House of Delegates of the Michigan State Medical Society has received important information concerning the problem of health insurance; and

"WHEREAS, This information raises many grave questions concerning the activities and the policies of American medicine toward health insurance; therefore, be it

"RESOLVED, That the delegates of the Michigan State Medical Society to the American Medical Association present the following resolution to the House of Delegates of the American Medical Association at the meeting in Cleveland in June, 1934:

"WHEREAS, There is substantial evidence that powerful forces and agencies are working toward the development of health insurance in the United States; and

"WHEREAS, During the course of its studies of medical economic problems the Michigan State Medical Society, after a conference with officials of the American Medical Association, found it necessary to send a commission to England to inquire into the subject of health insurance; and

"WHEREAS, The commission presented the following report (Luce-Sinai report); and

"WHEREAS, The report of the commission raises certain grave questions concerning the policy of the officials of the American Medical Association toward health insurance and the effects of this policy

upon the practicing membership of the American Medical Association; and

"WHEREAS, The report of the commission was transmitted to the Chairman of the Board of Trustees of the American Medical Association in February, 1934; and

"WHEREAS, The Michigan State Medical Society has received no official word nor has it any other evidence that the Board of Trustees of the American Medical Association has considered or acted upon the report transmitted in February, 1934; therefore, be it

"RESOLVED, That in order to avert a repetition in the United States of the disastrous consequences that attended the adoption of health insurance in England, the Spaker of the House of Delegates of the American Medical Association appoint a committee to investigate and consider the policy of the Association toward health insurance and present a report to the House of Delegates."

I move the adoption of this resolution.

The motion was supported by several.

The Speaker: Is there any discussion?

Dr. B. R. Corbus: It seems to me that this deserves a little bit of discussion.

I am very proud of the Economics Committee. I am very proud of Michigan, because I feel that Michigan has shown, in this last decade, a greater appreciation of the new social consciousness, which we have seen developing, than any other medical organization.

We are a unit of the American Medical Association, and that must not be forgotten. The Executive Committee and your Chairman are very appreciative that this movement for the care of the people of small incomes, in a medical way, is a national movement, and that the voice of the profession, in handling a situation fraught with so much concern to the medical profession of this country, is to be found in the American Medical Association.

It was because of this feeling that your Chairman called the meeting in Chicago for a discussion of the question as to whether we should or should not send these representatives abroad. We looked for help and advice from the American Medical Association, its employed officers. We thought there was, perhaps, information which they had which would be valuable to us and would not necessitate our sending these men to Europe.

There was a feeling on the part of those who were interested in studying this, the Economics Committee, that the American Medical Association, in its publications, was leaning well against any form of health insurance, and we wanted to know whether that was true. I must say that we got very little help from the American Medical Association at headquarters.

I think it is fair to say that they are very fearful of any experiment. They are fearful of any unit of their organization taking a position which would involve the national program. They say they have a great fund of information, but they were not willing to give it to us at that time.

So you have heard the report of the commission to England and their conclusions that representations have been made to us which were, perhaps it is fair to say, not unbiased.

All this being so, the point is that it is our obligation, as a unit of the American Medical Association, to do our part to see that they take a more active interest in this problem than they have heretofore taken, and that becomes the reason for this resolution.

Two years ago the House of Delegates of the American Medical Association instructed, with some qualifications, the Board of Trustees to send representatives to England and to Europe for the study of health service as it was practiced there. The Board of Trustees have seen fit not to make that investigation. It seems wise that some pressure shall be put upon them through the House of Delegates that they may take up the problem in a broad way and more vigorously than they have heretofore taken it up.

The Speaker: Is there any further discussion?

The question was called for.

The Speaker: Those in favor of the adoption of the resolution say "aye"; those opposed say "no." Carried unanimously.

Are there any other resolutions?

PUBLICITY

Dr. I. W. Greene (Shiawassee): This House of Delegates has taken a rather remarkable and unusual stand today. Sometimes it is said about the

physician that he is ultra-conservative. We have been charged with being selfish and of hiding ourselves behind an old-fashioned system of ethics, and that we have no social conscience.

We have taken a step today that shows we are willing to face these things. We have to find out what the reaction of the public is to this, and I think we can only find that out by letting them know what we have done, and then we will hear from them.

I wish to offer this resolution:

WHEREAS, The Committee on Economics recommends that general publicity be given to the plan for MUTUAL HEALTH SERVICES; therefore, be it

RESOLVED, That on adjournment of this special session the Press Committee be authorized to give to the representatives of the press a summary of the actions recorded and a copy of the report of the Committee on Medical Economics related to this plan; and be it

RESOLVED, That the Secretary be authorized to distribute copies of the report to inquiring individuals and to officers of medical organizations.

I move the adoption of this resolution.

Supported by several.

The Speaker: Is there any discussion of the resolution as read?

Dr. W. C. Ellet (Berrien): Can the Committee give us some idea of what form the publicity will take?

Dr. B. R. Corbus: Mr. Speaker, as a member of the Committee we are here to listen to you as to what you feel should be incorporated in the statement.

The Speaker: If you will allow me to read the resolution again, it will possibly answer that:

"That on adjournment of this special session the Press Committee be authorized to give to the representatives of the press a summary of the actions recorded and a copy of the report of the Committee on Medical Economics related to this plan; and be it

"RESOLVED, That the Secretary be authorized to distribute copies of the report to inquiring individuals and to officers of medical organizations."

Dr. B. L. Connelly (Wayne): I would just like to stress the point again that in the information which is given to the press we emphasize the point that it is an experimental proposition.

Dr. E. C. Baumgarten (Wayne): I don't know whether it would be in order or not, but I suppose the automatic action of the Press Committee would be that all information given to the press be signed by all members of the committee.

The Speaker: Is there any further discussion? You are voting on the question of the adoption of this resolution.

Those in favor say "aye"; those opposed say "no." It is carried unanimously.

Is there any other business?

FINANCES

Dr. Philip Riley (Jackson): Being a member of this committee, I have a resolution I would like to introduce here for further study.

WHEREAS, The House of Delegates of the Michigan State Medical Society has directed the Committee on Medical Economics to proceed with the development of an experiment in MUTUAL HEALTH SERVICE; and

WHEREAS, The present budget of the Committee on Medical Economics will only provide for the completion of the program adopted by the House of Delegates at its meeting in September, 1933; and

WHEREAS, The inauguration of the experiment in MUTUAL HEALTH SERVICE will entail the expenditure of additional funds; therefore, be it

RESOLVED, That the Committee on Medical Economics present a budget setting forth the costs of completing its study program and developing MUTUAL HEALTH SERVICE to the Executive Committee of the Michigan State Medical Society; and be it further

RESOLVED, That the House of Delegates approve the acceptance by the Executive Committee of finan-

cial support or assistance from any source or sources, provided, however, that such acceptance of funds or assistance shall not entail any change in the program adopted by the House of Delegates.

I move its adoption.

Supported by several.

The Speaker: Is there any discussion? If there is no discussion, those in favor say "aye"; those opposed say "no." Carried unanimously.

Is there any further business?

Dr. S. E. Gould (Wayne): I feel that this assembly here this afternoon is rather unique. It seems to me not only unique so far as the deliberations of the delegates of the Michigan State Medical Society are concerned, but I feel it must be unique as to the deliberations of any similar group in this country.

I think today we have made history. I think today the assembly here has started on something that is distinctly to the credit of the medical profession. I think up to the present time we have been backsliding. We have been afraid to do the thing that deep down in our hearts we felt was the thing to do. I think perhaps that is because we have been poor business men rather than because we haven't wanted to do the right thing. But I think we have started on something that is going to certainly reflect credit on the profession. I don't mean the adoption of such a plan. I mean finding out more about it; our attitude in going about this problem.

I think, further than that (and this is important), that the deliberations and the actions and the findings of the Medical Economics Committee and the commission are certainly to be commended. I think they are to be congratulated, even at the present time, for having done a very fine bit of work.

Dr. W. Joe Smith (Wexford): I would like to know before we adjourn, if that is what you are getting ready for, what you expect us to go back to our societies and tell them regarding this meeting, as far as the experiment to be tried is concerned. Do you want us to go back and talk to our men and send some word to this committee that we would like to try it in our county, with your approval, or what do you expect us to do along that line?

The Speaker: If you will allow the Chair to answer that, I will say go back and tell them everything. Put the cards on the table.

Dr. Smith: That isn't exactly what I mean. We will tell them everything. That is going to be in the paper.

Your motion said that the Secretary would send out some reprints of this meeting to all the members and to anyone who may ask for it, so it will probably all be in the paper.

What I want to know is how you are going to determine where you are going to start this ball rolling. Do you want some suggestions from our local societies in regard to that or not?

The Speaker: The Chair would be under the impression that that part is up to the committee. The committee must instigate and proceed with their work as outlined.

Dr. S. W. Insley (Wayne): I understood the motion in the first place to state that nothing was to be done as far as the setting up of an organization until following our next meeting. Am I correct?

The Secretary: Absolutely.

Dr. Insley: I don't see the point of some of the remarks.

Dr. Charles Ten Houten (Kalamazoo): I move that the House give the committee a vote of thanks for work well done, and give the committee a standing vote of confidence.

The motion was regularly supported.

The Speaker: Motion has been made and supported that the Economics Committee be given a standing vote of appreciation and confidence for their work. Those in favor arise.

The motion was unanimously carried by a rising vote.

Dr. H. W. Peirce (Wayne): I would like to move, Mr. Chairman, that we extend to Genesee County our sincere thanks and appreciation for their entertainment today, and for the use of this fine auditorium for our meeting.

The motion was regularly supported.

The Speaker: It has been moved and supported that we extend our thanks and appreciation to the Genesee County for their entertainment and the use of this auditorium.

Those in favor say "aye"; those opposed say "no." It is carried.

The meeting adjourned at three-ten o'clock.

I certify that the foregoing record is an unedited transcript of the stenographer's minutes.

F. C. WARNSHUIS,
Secretary.

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Michigan state medical society

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